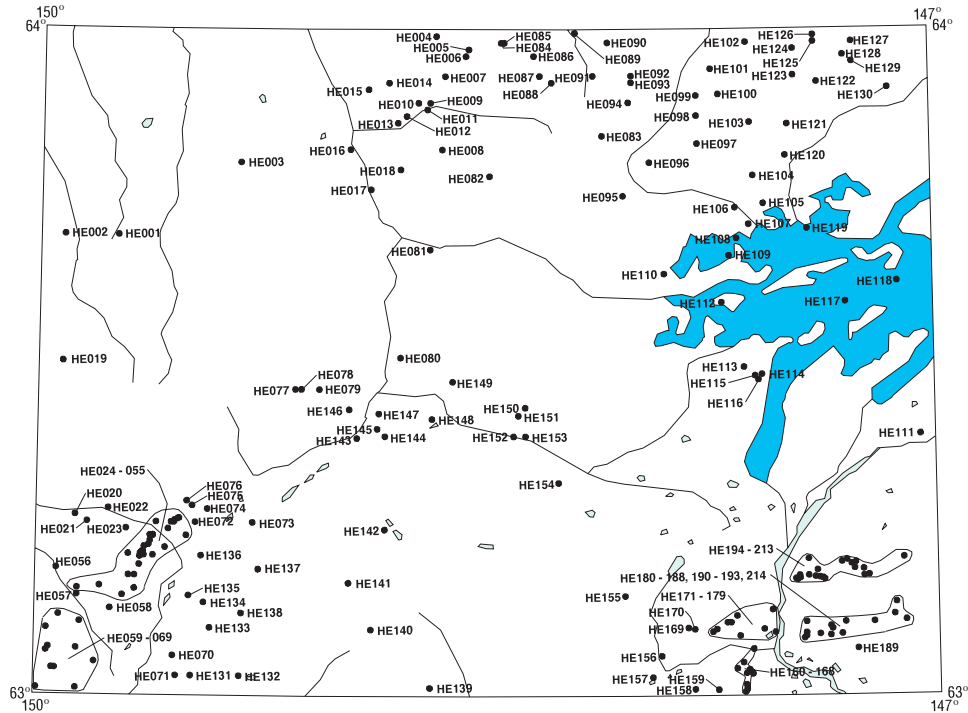


## Healy quadrangle

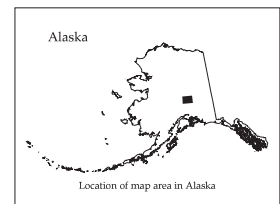
Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences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



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

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

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Anchorage, AK



*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): McCall****Site type:** Prospect**ARDF no.:** HE001**Latitude:** 63.69**Quadrangle:** HE C-6**Longitude:** 149.74**Location description and accuracy:**

The McCall prospect is at an elevation of about 2,400 feet on a northeast-trending spur above the headwaters of the Sushana River. It is in the northwest corner of sec. 19, T. 14 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 1 mile. This is location 1 of Clark and Cobb (1972).

**Commodities:****Main:** Ag, Pb**Other:****Ore minerals:** Galena**Gangue minerals:** Calcite, quartz, siderite**Geologic description:**

Little information about this prospect has been made public. Apparently, it consists of galena-bearing quartz-carbonate veins that cut Devonian metavolcanic schist and phyllite. Samples contain up to 55 percent lead and 6 ounces of silver per ton (Berg and Cobb, 1967).

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

The veins are Devonian or younger.

**Deposit model:**

Polymetallic veins (Cox and Singer, 1986; 22c)

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

22c

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Minor surface workings. Samples contain up to 55 percent lead and 6 ounces of silver per ton (Berg and Cobb, 1967).

**Production notes:**

**Reserves:**

**Additional comments:**

This site is in Denali National Park.

**References:**

Berg and Cobb, 1967; Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (near north end of Wyoming Hills)

**Site type:** Prospect

**ARDF no.:** HE002

**Latitude:** 63.69

**Quadrangle:** HE C-6

**Longitude:** 149.92

**Location description and accuracy:**

The approximate location of this prospect is near the north end of the Wyoming Hills, west of the East Fork Toklat River. The map site is at an elevation of about 3,800 feet, just north of the center of sec. 20, T. 14 S., R. 12 W., of the Fairbanks Meridian. The location is accurate to within 1.5 miles.

**Commodities:**

**Main:** Ag, Pb

**Other:** Zn

**Ore minerals:** Galena, sphalerite

**Gangue minerals:** Calcite, quartz

**Geologic description:**

The country rocks in the area of this prospect are Devonian metavolcanic schist and phyllite. Limited published information suggests that the deposit consists of silver-bearing galena-sphalerite-calcite-quartz veins in the metamorphic rocks. This description is largely inferred from Berg and Cobb's (1967) description of silver-rich lead-zinc veins in the Kantishna district.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Polymetallic veins (Cox and Singer, 1986; 22c)

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

22c

**Production Status:** Undetermined.

**Site Status:** Inactive

**Workings/exploration:**  
Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**  
Prospect is in Denali National Park Wilderness.

**References:**  
Berg and Cobb, 1967.

**Primary reference:** Berg and Cobb, 1967

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

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

**Site type:** Prospect

**ARDF no.:** HE003

**Latitude:** 63.80

**Quadrangle:** HE D-5

**Longitude:** 149.33

**Location description and accuracy:**

This placer gold prospect is on Sunday Creek, a west-flowing tributary of the Savage River. The map site is on lower Sunday Creek, at the center of sec. 8, T. 13 S., R. 9 W., of the Fairbanks Meridian. The location is accurate to within 1 mile.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Sunday Creek drains an area underlain by Eocene to Miocene, poorly consolidated, pebbly sandstone, claystone, and subbituminous coal, and a basement complex of Paleozoic or older Birch Creek Schist and Mesozoic and Tertiary plutons (Wilson and others, 1998). The probable sources of the placer gold in Sunday Creek are paleoplacers in the Tertiary sedimentary rocks.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Wilson and others, 1998.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Winter Creek****Site type:** Occurrence**ARDF no.:** HE004**Latitude:** 63.99**Quadrangle:** HE D-4**Longitude:** 148.67**Location description and accuracy:**

This placer gold occurrence is on Winter Creek, a tributary to California Creek north-east of Jumbo Dome. Placer activity has occurred upstream from the mouth of Winter Creek, to the map site, which is in the NE1/4 of sec. 2, T. 11 S., R. 6 W., of the Fairbanks Meridian.

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

The drainage area of Winter Creek includes a sequence of Eocene to Miocene, poorly consolidated, pebbly sandstone, claystone and subbituminous coal, that is overlapped unconformably by Nenana Gravel (Wilson and others, 1998). Most of Winter Creek flows over inliers of Keevy Peak Formation, cut by Pliocene hornblende dacite. The probable source of the placer gold in Winter Creek are Tertiary paleoplacers in the Nenana Gravel.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.



**Site Status:** Probably inactive

**Workings/exploration:**  
Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Wilson and others, 1998.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Homestake Creek; Platte Creek****Site type:** Mine**ARDF no.:** HE005**Latitude:** 63.97**Quadrangle:** HE D-4**Longitude:** 148.56**Location description and accuracy:**

Gold placer mining activity has taken place for at least 2 miles along Homestake Creek and its upstream continuation Platte Creek. The map site is in sec. 5, T. 11 S., R. 5 W., of the Fairbanks Meridian. This is location 57 of Clark and Cobb (1972).

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

Upper Platte Creek drains an Eocene to Miocene sequence of poorly consolidated pebbly sandstone, claystone, and subbituminous coal (Wilson and others, 1998). Lower Platte Creek to its junction with Fox Creek drains schist of the Keevy Peak Formation, which is intruded by Tertiary hypabyssal granitic rocks. The workings at Platte Creek are in well-sorted and rounded gravels 3 to 6 feet thick. Most of the gold is in the lower 2 to 3 feet of the gravel and upper part of schist bedrock. Paystreaks 25 to 60 feet wide were reported (Cobb, 1973: B1374). In Homestake Creek, the gravels are coarse and poorly sorted, and contain abundant cobble and boulder-sized clasts that include large angular blocks of andesite. The gravels in Platte Creek were reported to carry 0.14 ounce of gold per cubic yard. Gravels on bedrock downstream contained 0.14 to 0.43 ounce of gold per cubic yard (Capps, 1912). The most probable sources of the placer gold are Tertiary paleoplacers formed during an earlier erosional cycle of the Alaska Range.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Surface only. The gravels in Platte Creek were reported to carry 0.14 ounce of gold per cubic yard. Gravels on bedrock downstream contained 0.14 to 0.43 ounce of gold per cubic yard (Capps, 1912).

**Production notes:**

Most of the production occurred before 1912.

**Reserves:**

**Additional comments:**

The stream gradient in Platte Creek is 100 feet per mile; in Homestake Creek it is 200 feet per mile.

**References:**

Capps, 1912; Berg and Cobb, 1967; Cobb, 1973 (B 1374); Cobb, 1978 (OFR 78-1062); Wilson and others, 1998.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Fox Creek; Fox Gulch****Site type:** Mine**ARDF no.:** HE006**Latitude:** 63.96**Quadrangle:** HE D-4**Longitude:** 148.57**Location description and accuracy:**

The Fox Creek placer gold deposit is along Fox Creek from its junction with Homestake Creek upstream for the length of Fox Creek, a distance of approximately 1 mile. This site may also include some workings on Homestake Creek. The map site is at the approximate midpoint of the placer activity, in sec. 8, T. 11 S., R. 5 W., of the Fairbanks Meridian. This is location 57 of Clark and Cobb (1972).

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

Upper Fox Creek drains an Eocene to Miocene sequence of poorly consolidated, readily eroded pebbly sandstone, claystone and subbituminous coal (Wilson and others, 1998). Lower Fox Creek drains Keevy Peak Formation schist and Tertiary, hypabyssal granitic rocks. The most probable sources of the placer gold in Fox Creek are Tertiary paleoplacers formed during an earlier erosional cycle of the Alaska Range.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**  
Surface workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brooks, 1910; Brooks, 1911; Capps, 1912; Maddren, 1918; Brooks and Capps, 1924; Smith, 1930; Smith, 1933 (B 844); Smith, 1933 (B 857); Smith, 1936; Smith, 1937; Smith, 1938; Smith, 1942 (B 926); Smith, 1942 (B 933); Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062); Wilson and others, 1998.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

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

**Site type:** Mine

**ARDF no.:** HE007

**Latitude:** 63.93

**Quadrangle:** HE D-4

**Longitude:** 148.64

**Location description and accuracy:**

The Marguerite Creek placer gold mine is in upper Marguerite Creek, about 2 miles east northeast of Jumbo Dome. Most of the mining has been near the head of the creek, but some placer activity may have extended for some distance downstream. The map site is in sec. 13, T. 11 S., R. 6 W., of the Fairbanks Meridian. This is location 56 of Clark and Cobb (1972).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Most of Marguerite Creek drains an area underlain by Eocene to Miocene, poorly consolidated, pebbly sandstone, claystone and subbituminous coal. These strata pinch out northward and are overlapped unconformably by Tertiary Nenana Gravel (Wilson and others, 1998). Parts of Marguerite Creek flow over inliers of Keevy Peak Formation, and a Pliocene hornblende dacite plug centered on Jumbo Dome controls the arcuate shape of the creek. The probable source of the placer gold in Marguerite Creek are Tertiary paleo-placers in the Nenana Gravel.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

There are only surface workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Smith, 1930; Smith, 1932; Smith, 1933 (B 836); Smith, 1933 (B 844); Smith, 1933 (B 857); Smith, 1936 (B 864); Smith, 1936 (B 868); Smith, 1937; Smith, 1938; Smith, 1939; Smith, 1942 (B 926); Smith, 1942 (B 933); Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062); Wilson and others, 1998.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Sanderson Creek****Site type:** Prospect**ARDF no.:** HE008**Latitude:** 63.82**Quadrangle:** HE D-4**Longitude:** 148.65**Location description and accuracy:**

This placer gold prospect is on Sanderson Creek, a tributary of Lignite Creek. The map site is at about the midpoint of the placer, in the SW1/4 of sec. 36, T. 11 S., R. 6 W., of the Fairbanks Meridian.

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

Sanderson Creek drains an area underlain by Birch Creek Schist, by Mesozoic to Tertiary granites, and by younger Tertiary strata that overlie the older rocks. The Tertiary strata contain gold paleoplacers that probably are the source of the placer gold in Sanderson Creek. Claims have been located and relocated on Sanderson Creek, but there is no evidence that there has been any actual mining (Cobb, 1978: OFR 78-1062).

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.



**Site Status:** Probably inactive

**Workings/exploration:**

Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Maddren, 1918; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Gold Run Creek

**Site type:** Prospect

**ARDF no.:** HE009

**Latitude:** 63.89

**Quadrangle:** HE D-4

**Longitude:** 148.69

**Location description and accuracy:**

This gold placer is on Gold Run Creek, a south-flowing tributary to Healy Creek. Placer workings extend upstream for more than a mile, but most of the activity was from 0.2 to 0.8 mile from the mouth of Gold Run Creek. The map site is in the SE1/4 of sec. 10, T. 12 S., R. 6 W., of the Fairbanks Meridian.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Gold Run Creek drains the Tertiary Nenana Gravel, which locally contains gold paleoplacers. Those paleoplacers probably are the source of the placer gold in Gold Run Creek. Activity on Gold Run Creek was probably synchronous with that on nearby Gagnon Creek and French Gulch (HE010 and HE012) (Cobb, 1978: OFR 78-1062).

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Active?

**Workings/exploration:**

Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Cobb, 1978 (OFR 78-1062).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Gagnon Creek; Home Creek

**Site type:** Mine

**ARDF no.:** HE010

**Latitude:** 63.89

**Quadrangle:** HE D-4

**Longitude:** 148.73

**Location description and accuracy:**

The Gagnon Creek placer gold mine is along Gagnon Creek, a tributary to Healy Creek. Placer workings extend upstream from the mouth of the creek, but most of the activity was from about 0.2 to 0.8 mile from its mouth. The map site is in sec. 9, T. 12 S., R. 6 W., of the Fairbanks Meridian. This is location 65 of Clark and Cobb (1972).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Gagnon Creek drains the Tertiary Nenana Gravel, which locally contains gold paleo-placers. The deposit at Gagnon Creek consists of well-sorted auriferous gravels at a depth of up to 5 feet, and having an average thickness of 2 feet. The placer gold in Gagnon Gulch probably results from reworking the Nenana Gravel.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Surface only.

**Production notes:**

Approximately 194 ounces of gold was mined from 1913 to 1917 (Cobb, 1978 (OFR 78-1062).

**Reserves:**

**Additional comments:**

**References:**

Maddren, 1918; Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Healy Creek****Site type:** Mine**ARDF no.:** HE011**Latitude:** 63.88**Quadrangle:** HE D-4**Longitude:** 148.7**Location description and accuracy:**

Healy Creek is a tributary to the Nenana River. The creek has been placer mined for about 8 miles from the mouth of Healy Creek upstream nearly to the junction of Coal Creek. The map site is near the upper end of the workings, in the NE1/4 of sec. 15, T. 12 S., R. 6 W., of the Fairbanks Meridian.

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

Upper Healy Creek drains an area underlain by Birch Creek Schist cut by Mesozoic to Tertiary granites. Lower Healy Creek drains Eocene to Miocene sandstone, claystone and subbituminous coal (Wilson and others, 1998), unconformably overlain by gold-bearing Miocene gravels. The auriferous gravels are the likely source of placer gold in Healy Creek.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Probably inactive

**Workings/exploration:**

Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Capps, 1912; Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): French Gulch****Site type:** Prospect**ARDF no.:** HE012**Latitude:** 63.87**Quadrangle:** HE D-4**Longitude:** 148.77**Location description and accuracy:**

The French Gulch placer gold prospect is along French Gulch about 0.5 mile from its junction with Healy Creek. The map site is in sec. 17, T. 12 S., R. 6 W., of the Fairbanks Meridian. This is location 64 of Clark and Cobb (1972).

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

French Gulch drains the Tertiary Nenana Gravel, which locally contains gold paleoplacers. The source of the placer gold in French Gulch probably results from reworking the Nenana Gravel.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.**Site Status:** Inactive



**Workings/exploration:**

Surface only.

**Production notes:**

One of the limiting factors for mining here was the lack of water.

**Reserves:**

**Additional comments:**

**References:**

Brooks, 1915; Maddren, 1918; Wahrhaftig, 1970 (GQ 806); Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Alaska Creek; Alaska Gulch

**Site type:** Prospect

**ARDF no.:** HE013

**Latitude:** 63.86

**Quadrangle:** HE D-4

**Longitude:** 148.80

**Location description and accuracy:**

The Alaska Creek placer prospect is at an elevation of about 1,800 feet, about 0.3 mile upstream from its confluence with Healy Creek. The map site is in sec. 19, T. 12 S., R. 6 W., of the Fairbanks Meridian. This is location 63 of Clark and Cobb (1972).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Alaska Creek is a placer gold prospect that drains the Tertiary Nenana Gravel. The source of the Nenana Gravel is the Alaska Range, whose lode deposits presumably are the source of the gold (Yeend, 1982, 1984).

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Surface workings only; reports of nuggets up to 0.15 oz recovered (Cobb, 1978 (OFR 78-1062)).

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

Alaska Creek is northeast of three tributaries to Healy Creek that contain placer gold. See also: French Gulch (HE012) and Gagnon Creek (HE010).

**References:**

Brooks, 1915; Maddren, 1918; Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062); Yeend, 1982; Yeend, 1984.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Popovich Creek****Site type:** Prospect**ARDF no.:** HE014**Latitude:** 63.92**Quadrangle:** HE D-4**Longitude:** 148.83**Location description and accuracy:**

Popovich Creek is a south-flowing tributary to Lignite Creek. Placer gold has been reported along the lower course of Popovich Creek for a distance of 1.5 miles. The map site is about 0.3 mile upstream from the mouth of the creek, in sec. 36, T. 11 S., R. 7 W., of the Fairbanks Meridian.

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

Popovich Creek drains an area underlain by Eocene to Miocene, poorly consolidated, pebbly sandstone, claystone, and sub-bituminous coal. These strata pinch out northward and are overlapped unconformably by Tertiary Nenana Gravel (Wilson and others, 1998). Parts of Popovich Creek also flow over inliers of Keevy Peak Formation. The most probable sources of the placer gold in Popovich Creek are Tertiary paleoplacers in the Nenana Gravel.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Inactive

**Workings/exploration:**  
Surface workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Maddren, 1918; Wahrhaftig, 1970 (GQ 806); Cobb, 1978 (OFR 78-1062); Wilson and others, 1998.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Lignite Creek; Hoseanna Creek

**Site type:** Prospect

**ARDF no.:** HE015

**Latitude:** 63.91

**Quadrangle:** HE D-4

**Longitude:** 148.90

**Location description and accuracy:**

This placer prospect is on Lignite Creek, about 3 miles upstream from its junction with the Nenana River. The map site is near the mouth of Frances Creek, in sec. 3, T. 12 S., R. 7 W., of the Fairbanks Meridian.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Lignite Creek drains an Eocene to Miocene sequence of poorly consolidated, pebbly sandstone, claystone and subbituminous coal. The sequence pinches out northward and is overlapped unconformably by Tertiary Nenana Gravel (Wilson and others, 1998). The southern edge of the Lignite Creek drainage basin is underlain by Birch Creek Schist. Placer gold has been reported in Lignite Creek near the mouth of Frances Creek. The sources of the gold probably are paleoplacers in the Nenana Gravel.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Inactive

**Workings/exploration:**

Surface workings prior to 1918.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Maddren, 1918; Joesting, 1942 (MR 194-11); Cobb, 1978 (OFR 78-1062); Wilson and others, 1998.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Antler Creek****Site type:** Prospect**ARDF no.:** HE016**Latitude:** 63.82**Quadrangle:** HE D-4**Longitude:** 148.96**Location description and accuracy:**

This placer gold prospect is on Antler Creek, a northeast-flowing tributary to the Nenana River about midway between Garner and Moody. The map site is on lower Antler Creek, in the NW1/4 of sec. 5, T. 13 S., R. 7 W., of the Fairbanks Meridian. The location is accurate within 1 mile.

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

Antler Creek drains an area underlain by metasedimentary rocks of the Paleozoic or older Birch Creek Schist, and by Mesozoic and Tertiary intrusive rocks. The lode source of the placer gold in Antler Creek has not been identified.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None**Site Status:** Probably inactive



**Workings/exploration:**

Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Iceworm Gulch****Site type:** Prospect**ARDF no.:** HE017**Latitude:** 63.76**Quadrangle:** HE D-4**Longitude:** 148.89**Location description and accuracy:**

This placer gold prospect is in Iceworm Gulch, a tributary of the Nenana River about 2.5 miles upstream from the town of Moody. The map site is in the NW1/4 of sec. 27, T. 13 S., R. 7 W., of the Fairbanks Meridian.

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

Iceworm Gulch drains an area underlain by Birch Creek Schist and Mesozoic to Tertiary intrusive rocks. The source of the placer gold is unknown.

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

Quaternary.

**Deposit model:**

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

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

39a

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

Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (east of Sugar Loaf Mountain)

**Site type:** Prospect

**ARDF no.:** HE018

**Latitude:** 63.79

**Quadrangle:** HE D-4

**Longitude:** 148.79

**Location description and accuracy:**

This placer gold prospect is on an unnamed, northeast-flowing tributary to Moody Creek, about 1.3 mile east of Sugar Loaf Mountain. The map site is at the approximate midpoint of the placer activity, in the north-central part of sec. 18, T. 13 S., R. 6 W., of the Fairbanks Meridian.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

The area drained by this creek is underlain by the Birch Creek Schist, and Mesozoic to Tertiary intrusive rocks.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Wahrhaftig, 1958.

**Primary reference:** Wahrhaftig, 1958

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south of Polychrome Pass)

**Site type:** Prospect

**ARDF no.:** HE019

**Latitude:** 63.50

**Quadrangle:** HE B-6

**Longitude:** 149.92

**Location description and accuracy:**

This prospect is at an elevation of about 4,400 feet, east of upper Toklat River and about a mile south-southeast of Polychrome Pass. The map site is just north of the center of sec. 29, T. 16 S., R. 12 W., of the Fairbanks Meridian. Access to the site is from the McKinley Park road. The location is accurate to within 1 mile.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of this prospect are the Paleocene Cantwell Formation, which consists of andesite, basalt, rhyolite and dacite flows, pyroclastic rocks, a few interbeds of sandstone and a few small bodies of related subvolcanic intrusive rocks. Little information about this deposit has been made public. Apparently, it consists of auriferous quartz veins in the Paleocene volcanic rocks.

**Alteration:**

**Age of mineralization:**

Paleocene or younger.

**Deposit model:**

Low-sulfide Au-quartz veins(?) (Cox and Singer, 1986; model 36a)

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

36a(?)

**Production Status:** Undetermined.

**Site Status:** Inactive

**Workings/exploration:**

No recent exploration or development work. No record of old mine workings; probably surface work only.

**Production notes:**

**Reserves:**

**Additional comments:**

The prospect is in Denali National Park Wilderness.

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Triem****Site type:** Prospect**ARDF no.:** HE020**Latitude:** 63.27**Quadrangle:** HE B-6**Longitude:** 149.87**Location description and accuracy:**

The Triem gold placer prospect is on an unnamed, southeast-flowing tributary to the West Fork Chulitna River, about 4.3 miles downstream from the foot of West Fork Galcier. The map site is at the northwest corner of sec. 16, T. 19 S., R. 13 W., of the Fairbanks Meridian. This is location E-1 of Balen (1990: OFR 34-90).

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

The drainage basin of the West Fork Chulitna River locally contains auriferous lode deposits, but the specific source of the gold in the Triem placer deposit is unknown.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None**Site Status:** Inactive



**Workings/exploration:**

There are only surface workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (ORF 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): New Golden Zone****Site type:** Prospect**ARDF no.:** HE021**Latitude:** 63.26**Quadrangle:** HE B-6**Longitude:** 149.83**Location description and accuracy:**

The New Golden Zone placer gold prospect is on a north-flowing tributary to the West Fork Chulitna River, about 5.3 miles below the foot of West Fork Glacier. The map site is in the NW1/4 of sec. 22, T. 19 S., R. 12 W., of the Fairbanks Meridian. This is location E-2 of Balen (1990: OFR 34-90).

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

The drainage basin of the West Fork Chulitna River locally contains auriferous lode deposits, but the specific source of the gold in the New Golden Zone placer deposit is unknown.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None**Site Status:** Inactive

**Workings/exploration:**

There are only surface workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Kathleen**

**Site type:** Prospect

**ARDF no.:** HE022

**Latitude:** 63.28

**Quadrangle:** HE B-6

**Longitude:** 149.76

**Location description and accuracy:**

The Kathleen gold placer prospect is on Ruby Creek, a south-flowing tributary to West Fork Chulitna River, about 7 miles below the foot of West Fork Glacier. The map site is just below the center of sec. 12, T. 19 S., R 12 W., of the Fairbanks Meridian. The placer gold in Ruby Creek occurs for a distance of about 2 miles upstream from the mouth. This is location E-3 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

The drainage basin of the West Fork Chulitna River locally contains auriferous lodes, but the specific source of the gold in the Kathleen placer deposit is unknown.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface exploration.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Chulitna West****Site type:** Occurrences**ARDF no.:** HE023**Latitude:** 63.25**Quadrangle:** HE B-6**Longitude:** 149.70**Location description and accuracy:**

The West Fork Chulitna River contains occurrences of placer gold that extend about 2 miles upstream from the map site, which is the NW1/4 of sec. 20, T. 21 S., R. 11 W., of the Fairbanks Meridian. This is location E-4 of Balen (1990: OFR 34-90). The location is accurate to within 1 mile.

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

The West Fork Chulitna River drains a catchment basin containing porphyry, skarn, and vein deposits, all having significant gold content. These deposits probably are the sources of the placer gold in the West Fork Chulitna River.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None**Site Status:** Inactive

**Workings/exploration:**

There are only surface workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Black Bear 1-5****Site type:** Prospect**ARDF no.:** HE024**Latitude:** 63.26**Quadrangle:** HE B-6**Longitude:** 149.60**Location description and accuracy:**

The Black Bear placer gold prospect is on an unnamed, south-flowing tributary to the West Fork Chulitna River, about 1.5 miles upstream from the junction of Colorado Creek. The map site is in the NW1/4 of sec. 23, T. 19 S., R. 11 W., of the Fairbanks Meridian. This is location E-5 of Balen (1990: OFR 34-90).

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

The drainage area around the Black Bear gold placer prospect contains porphyry, skarn, and polymetallic and epithermal vein deposits, all having significant gold content. Three placer samples contained good gold values; the richest assayed 0.7 ounce of gold per ton (Balen, 1990: OFR 34-90).

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None



**Site Status:** Inactive

**Workings/exploration:**

Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (on Colorado Creek)

**Site type:** Prospect

**ARDF no.:** HE025

**Latitude:** 63.25

**Quadrangle:** HE B-6

**Longitude:** 149.56

**Location description and accuracy:**

Placer claims have been recorded along Colorado Creek from the junction with the West Fork Chulitna River upstream for about 2 miles. The map site is in sec. 24, T. 19 S., R. 11 W., of the Fairbanks Meridian. This is locality 4 of Cobb (1978: OFR 78-1062), and locality E-6 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Au

**Other:** Bi

**Ore minerals:** Bismuthinite, gold

**Gangue minerals:**

**Geologic description:**

The location of the Colorado Creek gold placer is uncertain, and there is no evidence of even minor production. The drainage area includes faulted Mesozoic and Paleozoic sedimentary and volcanic rocks that have been metamorphosed, intruded by a variety of dikes and stocks, and cut by polymetallic veins. Of interest are early reports that the placer concentrate contains bismuthinite, marcasite and rather coarse gold (Cobb, 1978: OFR 78-1062). Veins having this mineralogy occur north of the Golden Zone mine (HE043), and possibly also in the Colorado Creek drainage area.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Probably inactive

**Workings/exploration:**  
Surface exploration.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Capps, 1919; Ross, 1933; Berg and Cobb, 1967; Hawley and Clark, 1968; Clark and Cobb, 1972; Hawley and Clark, 1974; Cobb, 1978 (OFR 78-1062); Balen, 1990 (OFR 34-90).

**Primary reference:** Ross, 1933

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Silver King****Site type:** Prospect**ARDF no.:** HE026**Latitude:** 63.26**Quadrangle:** HE B-6**Longitude:** 149.55**Location description and accuracy:**

The Silver King prospect is located on the eastern side of Colorado Creek in the northern half of sections 19 and 24, T. 19 S., R. 10 W., of the Fairbanks Meridian. The location is accurate to within 0.5 mile. The Silver King prospect is not the same as the Silver King mine shown on the Healy A-6 1:63,360-scale topographic sheet.

**Commodities:****Main:** Ag, Au, Cu**Other:** Bi, Co, Sb**Ore minerals:** Arsenopyrite, chalcopyrite, pyrite, pyrrhotite, stibnite**Gangue minerals:** Calcite, quartz**Geologic description:**

Thick Quaternary glacial deposits and Upper Tertiary sedimentary strata cover the bedrock in this area. The country rocks in the area of the Silver King prospect consist of Upper Jurassic to Upper Triassic(?) crystal tuff, argillite, chert, graywacke, and limestone that are intruded by Upper Cretaceous quartz diorite porphyry stocks and dikes (Wilson and others, 1998). Intrusion of the dikes and quartz-sulfide mineralization are localized along the nearby Chulitna fault. The Silver King deposit includes: tactite (skarn) replacement bodies; auriferous arsenopyrite-chalcopyrite quartz veins; stibnite-gold-silver veins; silver-lead-zinc veins; and as breccia pipes associated with porphyry stock and dikes. Sporadic mineralization is present over a 2,000 feet by 800 feet area. (Hawley and Clark, 1974).

Hawley and Clark (1974) reported the following sample analyses. A massive sulfide pod in skarn contained 8.3 ounces of gold per ton. An arsenopyrite-rich vein contained 50 ppm silver, 200 ppm gold, 700 ppm cobalt, 1,500 ppm copper, 200 ppm lead, 500 ppm antimony, 200 ppm zinc, more than 1,000 ppm bismuth and more than 10,000 ppm arsenic. A stibnite-rich vein contained 10 ppm silver, 23 ppm gold, 200 ppm copper, 300 ppm lead, 1,500 ppm zinc, 7,000 ppm arsenic and more than 10,000 ppm antimony. Salisbury and Dietz (1984) reported the following: arsenopyrite veins returned assay values of 0.85 ounces of silver per ton, 0.87 ounces of gold per ton and 0.44% cobalt; and stibnite-

bearing veins contained 0.12 ounces of silver per ton and 0.29 ounces of gold per ton. The Silver King deposit is part of a northeast trending mineralized zone that includes the Liberty (HE028), Lucrata (HE029) and Eagle (HE030) prospects.

**Alteration:**

Skarn formation widespread; porphyry-type alteration is also reported.

**Age of mineralization:**

Similar sulfide-bearing intrusive rocks and veins in the district have been dated as Late Cretaceous (Swainbank and others, 1977), but Au-Ag-stibnite and Ag-Pb-Zn veins could be younger (Early Tertiary?).

**Deposit model:**

Polymetallic vein, Cu-Au porphyry, Cu skarn, and Simple Sb veins (Cox and Singer, 1986; models 22c, 20c, 18b, and 27d)

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

22c, 20c, 18b, 27d

**Production Status:** Undetermined.

**Site Status:** Active

**Workings/exploration:**

Surface workings, mostly trenches and pits. Site-specific geophysical surveys noted in literature and probably drill testing, but specific data are not available.

Hawley and Clark (1974) reported the following sample analyses. A massive sulfide pod in skarn contained 8.3 ounces of gold per ton. An arsenopyrite-rich vein contained 50 ppm silver, 200 ppm gold, 700 ppm cobalt, 1,500 ppm copper, 200 ppm lead, 500 ppm antimony, 200 ppm zinc, more than 1,000 ppm bismuth and more than 10,000 ppm arsenic. A stibnite-rich vein contained 10 ppm silver, 23 ppm gold, 200 ppm copper, 300 ppm lead, 1,500 ppm zinc, 7,000 ppm arsenic and more than 10,000 ppm antimony. Salisbury and Dietz (1984) reported the following: arsenopyrite veins returned assay values of 0.85 ounces of silver per ton, 0.87 ounces of gold per ton and 0.44% cobalt; and stibnite-bearing veins contained 0.12 ounces of silver per ton and 0.29 ounces of gold per ton.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Capps, 1919; Ross, 1933; Hawley and Clark, 1968; Hawley and others, 1969; Hawley and Clark, 1974; Swainbank and others, 1977; Hawley and others, 1978; Cobb, 1978 (OFR 78-1062); Bundtzen, 1983; Salisbury and Dietz, 1984; Balen, 1990 (OFR 34-90); Wilson

and others, 1998.

**Primary reference:** Salisbury and Dietz, 1984

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Center Star****Site type:** Prospect**ARDF no.:** HE027**Latitude:** 63.26**Quadrangle:** HE B-6**Longitude:** 149.54**Location description and accuracy:**

The Center Star prospect is at an elevation of about 2,700 feet on the broad flat ridge between Costello Creek and Colorado Creek. It is in sec. 18, T. 19 S., R. 10 W., of the Fairbanks Meridian. Access to the Center Star prospect is from the road to the Dunkle Coal mine. The Center Star prospect may overlap with the Liberty prospect (HE028). Accuracy of location is to within 0.5 mile.

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

Thick Quaternary glacial deposits and Upper Tertiary sedimentary strata cover most of the older bedrock in this area. Regionally, the main geologic feature is the northeast-trending Chulitna fault, which separates a sequence of Upper Jurassic to Upper Triassic (?) crystal tuff, argillite, chert, graywacke, and limestone on the north, from Upper Devonian to Lower Triassic volcanogenic and sedimentary rocks on the south. Faulting and shearing of the rocks has occurred, along with intrusions of Late Cretaceous dikes and stocks. As reported by Capps (1919), the Center Star prospect consists of arsenopyrite, pyrite and chalcopyrite disseminated in bluish dike rock.

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

Possibly Late Cretaceous or younger.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Minor open cut workings.

**Production notes:**

**Reserves:**

**Additional comments:**  
This site may overlap the Liberty prospect (HE028).

**References:**  
Capps, 1919; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s): Liberty****Site type:** Prospect**ARDF no.:** HE028**Latitude:** 63.263**Quadrangle:** HE B-6**Longitude:** 149.538**Location description and accuracy:**

The Liberty prospect is at an elevation of about 2,700 feet on the broad flat ridge between Costello Creek and Colorado Creek. It is in sec. 18, T. 19 S., R. 10 W., of the Fairbanks Meridian. Access to the prospect is from the road to the Dunkle Coal mine. The prospect is approximately 200 feet east of the road and approximately 500 feet south of the airstrip. The location is accurate to within 500 feet. This is locality 3 of Cobb (1978: OFR 78-1062).

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

Thick Quaternary glacial deposits and Upper Tertiary sedimentary cover the older rocks in this area, which consist of Upper Jurassic to Upper Triassic(?) crystal tuff, argillite, chert, graywacke, and limestone. The older rocks are intruded by Late Cretaceous quartz diorite dikes, mainly along the nearby Chulitna fault (Wilson and others, 1998). The Liberty deposit consists of arsenopyrite-bearing quartz veins, reportedly in silicified limestone. Samples from trenches and pits contain 0.06-0.14 ounce of gold per ton and 1.2-8.6 ounces of silver per ton (Ross, 1933). Hawley and others (1978) report values of 0.005 to 0.06 ounce of gold per ton and traces of silver in samples from the same trenches sampled by Ross (1933).

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

Probably Late Cretaceous (70-65 Ma) or younger, assuming deposit is related to the diorite dikes.

**Deposit model:**

Low-sulfide Au-quartz vein (Cox and Singer, 1987; model 36a)

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

36a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface trenching and pitting. Samples from trenches and pits contain 0.06-0.14 ounce of gold per ton and 1.2-8.6 ounces of silver per ton (Ross, 1933). Hawley and others (1978) report values of 0.005 to 0.06 ounce of gold per ton and traces of silver in samples from the same trenches sampled by Ross (1933).

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

Ross, 1933; Berg and Cobb, 1967; Hawley and Clark, 1974; Hawley and others, 1978; Cobb, 1978 (OFR 78-1062); Bundtzen, 1983; Salisbury and Dietz, 1984; Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Hawley and Clark, 1974

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Lucrata; Lucrative Group**Site type:** Prospect**ARDF no.:** HE029**Latitude:** 63.265**Quadrangle:** HE B-6**Longitude:** 149.529**Location description and accuracy:**

The Lucrata prospect is at an elevation of about 2,700 feet on the west bank of Costello Creek, about 0.3 mile south of the Dunkle mine camp. It is in sec. 18, T. 19 S., R. 10 W., of the Fairbanks Meridian. Accuracy of location is to within 500 feet. This is locality 2 of Cobb (1978: OFR 78-1062).

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

The general area of this prospect is characterized by thick Quaternary glacial deposits and Upper Tertiary sedimentary strata that mostly cover Upper Jurassic to Upper Triassic (?) crystal tuff, argillite, chert, graywacke, and limestone (Wilson and others, 1998). Upper Cretaceous quartz diorite dikes cut the mesozoic bedded rocks, mainly along the nearby Chulitna fault. At the Lucrata prospect, arsenopyrite-chalcopyrite pods up to 4 feet thick and 5 feet long area in a quartz stockwork in gabbro and basalt along the Chulitna fault zone. Assay values as high as 1.26 ounces of gold per ton and 3.8 ounces of silver per ton are reported by Hawley and Clark (1974); average grades of 0.49 ounce of gold per ton and 1.03 ounces of silver per ton are reported by Bundtzen (1983).

**Alteration:**

Quartz-sericite-pyrite alteration.

**Age of mineralization:**

Late Cretaceous or younger, assuming that the deposit is related to the intrusion of the quartz diorite.

**Deposit model:**

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

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

22c

**Production Status:** Undetermined.

**Site Status:** Active

**Workings/exploration:**

There has been both surface and underground exploration; a 15 ft tunnel was driven in 1920. Assay values as high as 1.26 ounces of gold per ton and 3.8 ounces of silver per ton are reported by Hawley and Clark (1974); average grades of 0.49 ounce of gold per ton and 1.03 ounces of silver per ton are reported by Bundtzen (1983).

**Production notes:**

**Reserves:**

**Additional comments:**

The Lucrata prospect has also been referred to as the Dunkle mine. This should be dropped as it invites comparison to the Dunkle coal mine, a separate deposit.

**References:**

Capps, 1919; Townsend, 1925; Ross, 1933; Berg and Cobb, 1967; Hawley and Clark, 1968; Hawley and Clark, 1974; Cobb, 1978 (OFR 78-1062); Bundtzen, 1983; Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Ross, 1933

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Eagle; Northern Light****Site type:** Prospect**ARDF no.:** HE030**Latitude:** 63.266**Quadrangle:** HE B-6**Longitude:** 149.524**Location description and accuracy:**

The Eagle prospect is at an elevation of about 2,800 feet on Costello Creek, about 0.3 mile south-southwest of the Dunkle mine camp. It is near the east-central boundary of sec. 18, T. 19 S., R. 11 W., of the Fairbanks Meridian. Access to the Eagle prospect is via the road to the Dunkle Coal Mine. The location is accurate within 500 feet. Published maps showing this prospect are Hawley and Clark (1974) and Hawley and others (1978). This is location 1 of Cobb (1978: OFR 78-1062).

**Commodities:****Main:** Ag, Au, Cu, Zn**Other:** Sb**Ore minerals:** Arsenopyrite, chalcopyrite, sphalerite, stibnite**Gangue minerals:** Quartz**Geologic description:**

Thick Quaternary glacial deposits and Upper Tertiary sedimentary strata cover most of the older bedrock in this area. Regionally, the main geologic feature is the northeast-trending Chulitna fault, which separates a sequence of Upper Jurassic to Upper Triassic (?) crystal tuff, argillite, chert, graywacke, and limestone on the north, from Upper Devonian to Lower Triassic volcanogenic and sedimentary rocks on the south. Faulting and shearing of the rocks has occurred, along with intrusions of Late Cretaceous dikes and stocks. The Eagle prospect is a 3-foot wide quartz vein that contains pods of arsenopyrite, chalcopyrite, sphalerite, and stibnite up to 1 foot wide. The vein is spatially associated with one or more dikes. The sulfide pods contain substantial Au and Ag values. Seven chip samples of the veins averaged 0.23 ounce of gold per ton and 4.55 ounces of silver per ton (Hawley and Clark, 1974; Ross, 1933; Bundtzen, 1983). The deposit is discontinuous, owing to post mineralization faulting and to pinch-and-swell structure of the vein. The Eagle vein is subparallel and about 400 feet east of the Lucrata segment of Upper Chulitna fault.

**Alteration:**

**Age of mineralization:**

Probably Late Cretaceous or younger.

**Deposit model:**

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

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

22c

**Production Status:** Undetermined.

**Site Status:** Active

**Workings/exploration:**

Exploration includes a 62-foot tunnel and open cuts over a strike length of 300 to 800 feet.

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

Estimated at 12,000 tons (Ross, 1933).

**Additional comments:**

Also see: Silver King (HE026), Liberty (HE028) and Lucrata (HE029).

**References:**

Capps, 1919; Ross, 1933; Hawley and Clark, 1973; Berg and Cobb, 1967; Hawley and Clark, 1974; Cobb, 1978 (OFR 78-1062); Hawley and others, 1978; Bundtzen, 1983.

**Primary reference:** Ross, 1933

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (on Costello Creek)

**Site type:** Occurrence

**ARDF no.:** HE031

**Latitude:** 63.24

**Quadrangle:** HE A-6

**Longitude:** 149.50

**Location description and accuracy:**

The map site of this placer occurrence is at an elevation of about 2,400 feet on Costello Creek. It is in sec. 29, T. 19 S., R. 10 W., of the Fairbanks Meridian. The site corresponds to loc. E-15 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Gold has been reported in an alluvial placer along Costello Creek, from its confluence with the Bull River upstream for about 2 miles. Costello Creek drains a atachment basin containing porphyry, skarn, polymetallic, and epithermal veins, all with significant gold contents.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Minor surface workings show traces of gold in placer samples (Balén, 1990: OFR 34-90).

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

Cobb, 1978 (OFR 78-1062); Balén, 1990 (OFR 34-90).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s): Lookout Mountain****Site type:** Prospect**ARDF no.:** HE032**Latitude:** 63.222**Quadrangle:** HE A-6**Longitude:** 149.570**Location description and accuracy:**

This prospect is at an elevation of about 2,700 feet on the southeast flank of Lookout Mountain, approximately 0.4 mile south-southeast of the top of the mountain. This site is located in sec. 36, T. 19 S., R. 10 W., of the Fairbanks Meridian. The location is accurate within 1,000 feet. This is locality 13 of Cobb (1978: OFR 78-1062).

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

The country rocks in the prospect area are Upper Jurassic to Upper Triassic crystal tuff, argillite, graywacke and chert (Wilson and others, 1998). The strata are intruded by Upper Cretaceous or Lower Tertiary quartz porphyry and felsite. The deposit consists of argentiferous galena and sphalerite along fractures in a shear zone, in pipe breccias, and as disseminations in quartz porphyry. Scattered outcrops suggest that the quartz porphyry and felsite underlie an area about 1200 feet in diameter. Sulfides also are reported in breccia zones both in the intrusive and bedded rocks (Hawley and Clark, 1974). The breccias at Lookout Mountain are similar to those at the Golden Zone mine (HE043), but differ from them in containing more silver, lead, zinc, and tin.

**Alteration:**

Minor sericitic-phyllitic reported.

**Age of mineralization:**

Late Cretaceous or younger, assuming that the deposit is related to the quartz porphyry and felsite.

**Deposit model:**

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

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

22c

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Limited surface work and sampling has been carried out on this prospect. The area has been covered by regional and detailed geophysical surveys.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Hawley and others, 1969; Hawley and Clark, 1974; Hawley and others, 1978; Cobb, 1978 (OFR 78-1062); Balen, 1990 (OFR 34-90); Kurtak and others, 1992; Wilson and others, 1998.

**Primary reference:** Hawley and Clark, 1974

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Riverside****Site type:** Prospect**ARDF no.:** HE033**Latitude:** 63.24**Quadrangle:** HE A-6**Longitude:** 149.61**Location description and accuracy:**

The prospect is on the south bank of the West Fork Chulitna River, just upstream from the mouth of Bryn Mawr Creek. It is located in sec. 26, T.19 S., R. 11 W., of the Fairbanks Meridian. Accuracy is within 0.5 miles.

This is location 7 of Cobb (1978: OFR 78-1062).

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

The country rocks in the area of the Riverside prospect are Triassic, redbed sandstone, conglomerate and limestone that have been intruded by a hornblende-quartz diorite dike. The deposit is in hornfelsed bedded rocks and consists chiefly of quartz-sulfide veins, and stockworks, and of sulfide disseminations. The sulfide minerals are arsenopyrite, chalcopyrite, galena, pyrite, pyrrhotite, and sphalerite. Small, sulfide-bearing skarn deposits are in marble adjacent to the dike (unpublished report by Addwest Minerals International Ltd., 1997). Samples contain 0.02 to 0.72 ounce of gold per ton and 0.3 to 2.10 ounces of silver per ton (Ross, 1933). The relatively high gold and silver values may be due to supergene enrichment. A fault may truncate the deposit to the south. The Riverside deposit is similar in mineralogy and type to other deposits satellitic to the Golden Zone deposit (HE043).

**Alteration:**

Narrow phyllic alteration haloes around and in porphyry dikes typically consists of sericite, quartz, and pyrite. In addition, skarn alteration minerals are garnet, pyroxene, and epidote.

**Age of mineralization:**

Late Cretaceous (70 -65 Ma), assuming that the deposit is satellitic to the Golden Zone deposit (HE043).

**Deposit model:**

Cu skarn; Polymetallic veins (Cox and Singer, 1986; models 18b, 22c)

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

18b, 22c

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Mainly surface workings. There are reports of a 10-foot tunnel and 15-foot shaft that are now caved. Recent geochemical exploration has identified a broad soil anomaly that outlines the deposit. Samples contain 0.02 to 0.72 ounce of gold per ton and 0.3 to 2.10 ounces of silver per ton (Ross, 1933).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Capps, 1919; Townsend, 1925; Ross, 1933; Berg and Cobb, 1967; Hawley and Clark, 1974; Cobb, 1978 (OFR 78-1062); Hawley and others, 1978.

**Primary reference:** Hawley and Clark, 1974

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Jumbo****Site type:** Prospect**ARDF no.:** HE034**Latitude:** 63.24**Quadrangle:** HE A-6**Longitude:** 149.61**Location description and accuracy:**

The Jumbo prospect is at an elevation of about 2,200 feet on the south bank of the West Fork Chulitna River, about 0.5 mile from the junction of Bryn Mawr Creek. It is in sec. 26, T. 19 S., R. 11 E., of the Fairbanks Meridian. The location is accurate to within 1 mile. This is locality 7 of Cobb (1978: OFR 78-1062). According to Capps (1919), the Jumbo prospect adjoins the Riverside prospect (HE033).

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

Bunches and specks of sulfides, mainly pyrrhotite along with some pyrite and chalcopyrite, are disseminated in Triassic conglomerate adjacent to a porphyry dike. The dike is similar in composition to the Upper Cretaceous porphyry at the Golden Zone mine (HE043).

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

Probably Late Cretaceous or younger.

**Deposit model:**

Cu porphyry (Cox and Singer, 1986; model 18a)

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

18a

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Only open-cut surface workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Capps, 1919; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Capps, 1919

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Pirate Creek****Site type:** Prospect**ARDF no.:** HE035**Latitude:** 63.24**Quadrangle:** HE A-6**Longitude:** 149.62**Location description and accuracy:**

The Pirate Creek prospect is on the south bank of the West Fork Chulitna River, about a mile upstream from the junction of Bryn Mawr Creek. The map site is at the west edge of sec. 26, T. 19 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within half a mile. Also see Additional comments.

**Commodities:****Main:** Ag, Au**Other:** Sb**Ore minerals:** Arsenopyrite, stibnite**Gangue minerals:** Quartz**Geologic description:**

The country rocks at the Pirate Creek prospect are Permo-Triassic argillite and gray-wacke. The deposit consists of quartz veins containing arsenopyrite and stibnite. The veins contain up to 0.03 ounce of gold per ton as determined from trench samples. The veins are subparallel, and adjacent to a northeast-trending splay of the Zigzag Creek fault, suggesting a genetic relationship (unpublished report by Addwest Minerals International Ltd., 1997). The Pirate Creek deposit contains stibnite, which distinguishes it from other deposits in the area.

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

Probably Late Cretaceous (70 - 65 Ma) or younger (HE043).

**Deposit model:**

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

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

22c

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**  
Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**  
The Pirate Creek claims group may overlap with either, or both, the Flaurier (HE036) and Jumbo (HE034) prospects.

**References:**  
Unpublished report by Addwest Minerals International Ltd., 1997.

**Primary reference:** Unpublished report by Addwest Minerals International Ltd., 1997

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s): Flaurier****Site type:** Prospect**ARDF no.:** HE036**Latitude:** 63.24**Quadrangle:** HE A-6**Longitude:** 149.61**Location description and accuracy:**

The Flaurier prospect is at an elevation of about 2,400 feet, on the south bank of the West Fork Chulitna River, about 0.5 mile upstream from the junction of Bryn Mawr Creek. This site is in sec. 26, T. 19 S., R. 11 W., of the Fairbanks Meridian. Access is via road to the Golden Zone mine (HE043). The location is accurate to within 1 mile. This is locality 7 of Cobb (1978: OFR 78-1062).

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

Capps (1919) describes the Flaurier prospect as sulfide-bearing porphyry dikes that cut Triassic chert, argillite, tuff, and limestone. The dikes are similar in composition to those at the Golden Zone mine (HE043). The sulfide minerals are arsenopyrite and chalcopyrite, and they apparently are widely disseminated in the prospect area. Samples reportedly contain significant gold and silver values.

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

Probably Late Cretaceous (70 -65 Ma).

**Deposit model:**

Cu porphyry(?) (Cox and Singer, 1986; model 18a)

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

18a(?)

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

A few open cuts.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Capps, 1919; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Capps, 1919

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Banner****Site type:** Prospect**ARDF no.:** HE037**Latitude:** 63.232**Quadrangle:** HE A-6**Longitude:** 149.620**Location description and accuracy:**

The Banner prospect is at an elevation of about 2,600 feet, about 1.1 mile southwest of the confluence of Bryn Mawr Creek and the West Fork of Chulitna River. It is in SE1/4 sec. 27, T. 19 S., R. 10 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet. This is locality 2-3 of Hawley and Clark (1974).

**Commodities:****Main:** Ag, Au, Cu**Other:****Ore minerals:** Arsenopyrite, chalcopyrite, pyrite, pyrrhotite**Gangue minerals:** Quartz, sericite**Geologic description:**

In the area of the Banner prospect, the northeast-trending Banner fault separates unaltered Triassic sedimentary rocks on the southeast from strongly altered Triassic conglomerate, hornfels, and marble on the northwest. The altered rocks are cut by skarn zones extending 500 feet from the fault zone. The deposit consists of sulfide-bearing skarn and quartz-sericite veins that cut the skarn. Sulfides in the skarn zones vary in content, but average about 10%. They consist of arsenopyrite, pyrrhotite, pyrite, chalcopyrite (unpublished report by Addwest Minerals International Ltd., 1997). Copper content ranges up to 1% and gold values run 0.4 to 1 ounce per ton. The Banner skarn deposit probably is related to an apophysis of the Upper Cretaceous (70-65 Ma) porphyry plug at the Golden Zone mine (HE043).

**Alteration:**

Pyrite-quartz-sericite veins overprint earlier skarn calc-silicate assemblages that consist of epidote, pyroxene, actinolite, and occasional garnet.

**Age of mineralization:**

The skarns are probably related to an apophysis of the Upper Cretaceous (70-65 Ma) porphyry plug at the Golden Zone mine (HE043). The quartz-sericite veins may be Terti-

ary.

**Deposit model:**

Cu skarn and polymetallic veins (Cox and Singer, 1986; models 18b, 22c)

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

18b, 22c

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Workings consist of surface trenches and two holes drilled to a maximum depth of 300 feet. Copper content ranges up to 1% and gold values run 0.4 to 1 ounce per ton.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Hawley and Clark, 1974; Hawley and others, 1978.

**Primary reference:** Hawley and Clark, 1974

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Lupin****Site type:** Prospect**ARDF no.:** HE038**Latitude:** 63.226**Quadrangle:** HE A-6**Longitude:** 149.624**Location description and accuracy:**

The Lupin prospect is at an elevation of about 2,800 feet, on the northwest bank of Bryn Mawr Creek. The map site is in the NE1/4 of sec. 34, T. 19 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet.

**Commodities:****Main:** Ag, Au**Other:** As, Bi, Hg, Sb**Ore minerals:** Arsenopyrite, chalcopyrite**Gangue minerals:** Quartz**Geologic description:**

The Lupin prospect is about 3,100 feet northeast of the Golden Zone mine (HE043). The country rocks at the prospect are faulted, Triassic redbed sedimentary rocks. The deposit consists of fault-controlled quartz veins containing arsenopyrite and chalcopyrite. The hostrocks adjacent to the veins are bleached and argillized (unpublished report by Addwest Minerals International Ltd., 1997). Drilling has identified sericitized dikes but their relation to the deposit is not clear. The Lupin deposit closely resembles the deposit at the Bunkhouse prospect (HE039).

**Alteration:**

Narrow zones adjacent to the veins are bleached and argillized.

**Age of mineralization:**

Late Cretaceous or younger (see HE043).

**Deposit model:**

Polymetallic vein or hot-spring Ag-Au (Cox and Singer, 1986; model 22c, 25a)

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

22c, 25a

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Trenching and one drill hole have been completed at the prospect.

**Production notes:**

**Reserves:**

**Additional comments:**

See Bunkhouse (HE039).

**References:**

**Primary reference:** Unpublished report by Addwest Minerals International Ltd., 1997

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Bunkhouse****Site type:** Prospect**ARDF no.:** HE039**Latitude:** 63.223**Quadrangle:** HE A-6**Longitude:** 149.639**Location description and accuracy:**

The Bunkhouse prospect is at an elevation of about 2,950 feet, on the northwest bank of Bryn Mawr Creek. The map site is in the SW1/4 of sec. 34, T. 19 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet.

**Commodities:****Main:** Ag, Au**Other:** As, Bi, Hg, Sb**Ore minerals:** Arsenopyrite, marcasite(?), pyrite**Gangue minerals:** Quartz**Geologic description:**

The Bunkhouse prospect is about 2,500 feet north-northeast of the Golden Zone (HE043). The country rocks at the prospect are Triassic redbed sedimentary rocks, cut by the Bryn Mawr fault. The deposit consists of fault-controlled quartz stockwork veins and pods containing pyrite, arsenopyrite, and marcasite(?). The country rocks adjacent to the veins are bleached and argillized (unpublished report by Addwest Minerals International Ltd., 1997). Zones of disseminated sulfides up to 15 feet thick in the altered country rock contain up to 0.2 ounce of gold per ton (unpublished drill hole data). The Bunkhouse (and Lupin, HE038) deposits contain less base metals and more silver, arsenic, antimony, mercury and bismuth than the other deposits at and near the Golden Zone mine. Their ore mineralogy suggests an epithermal depositional environment.

**Alteration:**

Zones adjacent to the veins are bleached and argillized.

**Age of mineralization:**

The Bunkhouse deposit may postdate the Late Cretaceous - Early Tertiary deposit at the Golden Zone mine (HE043).

**Deposit model:**

Polymetallic vein or hot-spring Ag-Au (Cox and Singer, 1986; model 22c, 25a)

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

22c, 25a

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

The Bunkhouse deposit was discovered by trenching and soil sampling. Five drill holes, totaling 2100 feet, have tested the prospect to a depth of 500 feet (unpublished report by Addwest Minerals International Ltd., 1997).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

**Primary reference:** unpublished report by Addwest Minerals International Ltd., 1997

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s): Mayflower****Site type:** Prospect**ARDF no.:** HE040**Latitude:** 63.216**Quadrangle:** HE A-6**Longitude:** 149.643**Location description and accuracy:**

The Mayflower prospect is at an elevation of about 3,400 feet, on the west side of Bryn Mawr Creek. It is in the NW1/4 of sec. 3, T. 20 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 400 feet.

**Commodities:****Main:** Ag, Au, Cu**Other:** As, Pb, Sb, Zn**Ore minerals:** Arsenopyrite, chalcopyrite, galena, gold, pyrite, pyrrhotite, sphalerite, stibnite**Gangue minerals:** Ankerite, quartz**Geologic description:**

The country rocks in the area of the Mayflower prospect include Devonian to Triassic clastic, carbonate, volcanic, and volcanoclastic strata, which are intruded by a plug and dikes of Upper Cretaceous (70-65 Ma) quartz diorite porphyry (Swainbank and others, 1977). The Mayflower prospect is associated with a dike-like extension of the intrusive plug at the Golden Zone mine (HE043). Major faults trend northeast-southwest and have imparted a strong northeast-trending fabric to the host rocks. These faults have controlled the emplacement of intrusive rocks. At the Mayflower there is evidence that northwest-trending faults predated intrusion, as the dike trends northwest before swinging back to the northeast. The northwest-trending shear zone was also important during mineralization (unpublished report by Addwest Minerals International Ltd., 1997).

There are three types of deposits: sulfide disseminations, veins, and skarns. The dike contains disseminated sulfides and stockwork quartz-sulfide veinlets. Limonite and ankerite alteration is widespread. Adjacent to the dike, calc-silicate skarn bodies up to 15 feet thick contain 0.1 ounce of gold per ton and 10% combined lead and zinc. The skarn comprises pyrrhotite, pyrite, chalcopyrite, and arsenopyrite (up to 10% by volume) in an epidote, garnet, and actinolite (unpublished report by Addwest Minerals International Ltd., 1997).

**Alteration:**

Alteration consists of a combination of skarn (epidote, garnet and actinolite), silica flooding, ankerite, pyrite and sericite. Limonite and uncommon chalcocite are oxidation and supergene mineral assemblages.

**Age of mineralization:**

The Mayflower prospect is a satellite of the nearby Golden Zone mine (HE043) which has been dated at 70-65 Ma (Late Cretaceous) (Swainbank and others, 1977).

**Deposit model:**

Combination of polymetallic vein and Au-Ag breccia pipe or Cu-Au porphyry (Cox and Singer, 1986; models 22c, 20c), with Cu skarn (Cox and Singer, 1986; model 18b)

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

22c, 20c, 18b

**Production Status:** Undetermined.

**Site Status:** Active

**Workings/exploration:**

The prospect was explored by a reconnaissance IP and CS-AMT survey and by 1,500 feet of trenching. One shallow shaft was dug (during the 1930s?) and since has collapsed (Hawley and Clark, 1974).

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

See Golden Zone mine (HE043).

**References:**

Berg and Cobb, 1967; Mulligan and others, 1967; Hawley and Clark, 1974; Cobb, 1978 (OFR 78-1062).

**Primary reference:** unpublished report by Addwest Minerals International Ltd., 1997

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): East Vein****Site type:** Prospect**ARDF no.:** HE041**Latitude:** 63.216**Quadrangle:** HE A-6**Longitude:** 149.643**Location description and accuracy:**

The East Vein prospect is at an elevation of about 3,400 feet in and adjacent to Bryn Mawr Creek. The site is in sec. 3, T. 20 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 400 feet.

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

The country rocks at the East Vein prospect are hornfelsed Triassic red-bed sedimentary strata. The deposit is a quartz stringer lode that strikes N30E, dips steeply to the northwest, and has a strike length of over 1,000 feet. The lode ranges from 1 to 3 feet wide and contains discontinuous pods of arsenopyrite, chalcopyrite, galena, pyrite, and sphalerite. In Bryn Mawr Creek the vein contains up to 80% sulfides. In places, the vein is in gradational contact with country rock. Sulfide composition varies over short distances from arsenopyrite-rich to galena-sphalerite-rich zones. Vein samples assayed 0.01-0.90 ounce of gold per ton, 1.2-8.5 ounces of silver per ton, 0.15-0.73% copper, up to 1.8% lead, and up to 17% zinc (Mulligan and others, 1967). The East Vein prospect is about 500 feet east-northeast of the Golden Zone mine (HE043), and probably is an extension of that deposit.

**Alteration:**

The alteration is probably similar to that described for the adjacent Golden Zone and BLT, which consists of sericite, ankerite and quartz.

**Age of mineralization:**

Probably Late Cretaceous.

**Deposit model:**

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

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

22c

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

All surface exploration. Vein samples assayed 0.01-0.90 ounce of gold per ton, 1.2-8.5 ounces of silver per ton, 0.15-0.73% copper, up to 1.8% lead, and up to 17% zinc (Mulligan and others, 1967).

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

Mulligan and others, 1967; Hawley and Clark, 1974; Hawley and others, 1978.

**Primary reference:** Hawley and Clark, 1974

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (upper Bryn Mawr Creek)

**Site type:** Prospect

**ARDF no.:** HE042

**Latitude:** 63.21

**Quadrangle:** HE A-6

**Longitude:** 149.64

**Location description and accuracy:**

This placer deposit is at an elevation of about 3,300 feet on upper Bryn Mawr Creek. It is in the NW1/4 of sec. 3, T. 20 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 0.5 mile. This is locality 8 of Cobb (1978: OFR 78-1062).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

The Bryn Mawr Creek placer prospect produced small amounts of gold in 1909 (Cobb, 1978: OFR 78-1062). The source of the gold is the Golden Zone lode deposit (HE043), just upstream from the placer.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Capps, 1919; Capps, 1933; Ross, 1933; Mulligan and others, 1967; Cobb, 1973 (B 1374); Hawley and Clark, 1973; Hawley and Clark, 1974; Hawley and others, 1978; Cobb, 1978 (OFR 78-1062); Balen, 1990 (OFR 34-90); Balen, 1990 (OFR 40-90); Kurtak and others, 1992.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Golden Zone****Site type:** Mine**ARDF no.:** HE043**Latitude:** 63.214**Quadrangle:** HE A-6**Longitude:** 149.647**Location description and accuracy:**

The Golden Zone mine is located at the headwaters of Bryn Mawr Creek, a tributary of the West Fork Chulitna River. The map site is at an elevation of about 3,500 feet, on the north bank of the creek, and about 2,000 feet southwest of the Golden Zone mine symbol on the topographic map. Access is via dirt road from Colorado Station along the north side of the West Fork Chulitna River to the junction with Bryn Mawr Creek. The road crosses the West Fork Chulitna River and climbs southwesterly to the mine site at an approximate elevation of 3,500 feet. The site is in the NW1/4 of sec. 3, T. 20 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet.

**Commodities:****Main:** Ag, Au**Other:** Cu, Pb, Zn**Ore minerals:** Arsenopyrite, chalcopyrite, galena, pyrite, sphalerite, tetrahedrite**Gangue minerals:** Calcite, quartz, sericite**Geologic description:**

The country rocks in the area of the Golden Zone mine include Devonian to Triassic clastic, carbonate, volcanic, and volcanoclastic strata, which are intruded by an Upper Cretaceous (70-65 Ma) biotite-quartz diorite porphyry plug (Swainbank and others, 1977). The Golden Zone is the most significant deposit in the southwest portion of the Healy quadrangle. The deposit consists mostly of a single breccia pipe that measures 250 by 300 feet at the surface and thins downward. The contacts are steeply dipping except on the northern side where the dips appear to flatten to the north. Drilling has confirmed that the pipe reaches a depth of 650 feet and possibly as deep as 1,500 feet. The pipe is almost entirely contained within a biotite-quartz diorite porphyry plug measuring 600 by 1,000 feet. The breccia pipe was produced by magmatic devolatilization either from the diorite porphyry or from a related intrusion at depth. Both the breccia and the porphyry have been dated at 65-70 Ma (Swainbank and others, 1977). Major faults in the area trend northeast-southwest and have imparted a strong northeast trending fabric to the host rocks. Differential motion along these faults has localized the subsequent emplacement of the biotite-

quartz diorite porphyry and mineralizing fluids. Postmineral northwest-trending faults cut the breccia (unpublished report by Addwest Minerals International, Ltd, 1997). Early brecciation produced angular clasts cemented by vuggy, pale-gray quartz and minor amounts of arsenopyrite, pyrite, pyrrhotite, chalcopyrite and sphalerite. Several younger, sulfide-dominated events have overprinted the earlier, relatively barren, quartz-dominated brecciation, producing breccias containing over 10% sulfides. These younger breccias can be subdivided into arsenic-rich zones (earliest) and copper-rich zones (late); the former contains better gold grades - in places up to 5 ounces of gold per ton.

**Alteration:**

Alteration and mineral zonation is present around the Golden Zone pipe. A distal lead and zinc halo is reported up to 2 miles from the pipe; the gold/silver ratios in arsenopyrite and chalcopyrite show a systematic variation; and red-bed sediments show widespread bleaching (C.C. Hawley, oral communication, 1999). Propylitic haloes consisting of epidote-carbonate-chlorite are present at the margin of the quartz diorite stock, and hornfels-skarn zones are in carbonate-rich country rock. Sericite is the dominant alteration mineral in the breccias, and argillic overprinting (?), quartz flooding and Fe-carbonates are also reported, but their paragenesis is as yet unclear.

**Age of mineralization:**

The Golden Zone is a magma-driven breccia pipe. Both the intrusion and the breccia minerals are Late Cretaceous (70-65 Ma) in age (Swainbank and others, 1977).

**Deposit model:**

Polymetallic vein and Au-Ag breccia pipe or Cu-Au porphyry (Cox and Singer, 1986; models 22c, 20c)

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

22c, 20c

**Production Status:** Yes; small

**Site Status:** Active

**Workings/exploration:**

There are both surface and underground workings at the Golden Zone mine. Exploration between 1936 and 1996 included 54,326 feet of drilling in 137 drill holes (102 core and 35 reverse circulation holes). Numerous trenches and geochemistry samples have been collected. 1,900 feet of underground development has accumulated on the 100, 200 and 500 foot levels. Close-spaced helicopter aeromagnetic and EM geophysical surveys have been flown over the mine, along with some ground-based IP work (unpublished report by Addwest Minerals International Ltd., 1997). The State of Alaska sponsored an aeromagnetic survey in 1996 that included the mine site in 1996 (Burns, 1997).

Sulfide-dominated events have overprinted the earlier, relatively barren, quartz-dominated brecciation, producing breccias containing over 10% sulfides. These younger breccias can be subdivided into arsenic-rich zones (earliest) and copper-rich zones (late);



the former contains better gold grades - in places up to 5 ounces of gold per ton.

**Production notes:**

The mine produced 49,169 grams of gold, 267,990 grams of silver, and 19 tonnes of copper between 1941 and 1942 (Hawley and Clark, 1974).

**Reserves:**

The proven and probable reserves of the breccia pipe and surrounding prospect are 8 million tons containing 0.1 ounce of gold per ton (at a cutoff of 0.02 ounce of gold per ton), or about 800,000 ounces of gold.

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

Capps, 1919; Capps, 1924; Capps, 1933; Ross, 1933; Wells, 1956; Berg and Cobb, 1967; Mulligan and others, 1967; Hawley and Clark, 1968; Hawley and others, 1968; Clark and Cobb, 1972; Hawley and Clark, 1974; Swainbank and others, 1977; Hawley and others, 1978; Cobb, 1978 (OFR 78-1062); Eakins and others, 1985; Nokleberg and others, 1987; Balen, 1990 (OFR 34-90); Balen, 1990 (OFR 40-90); Kurtak and others, 1992; Nokleberg and others, 1994; Burns, 1997.

**Primary reference:** Hawley and others, 1978

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** BLT**Site type:** Prospects**ARDF no.:** HE044**Latitude:** 63.213**Quadrangle:** HE A-6**Longitude:** 149.651**Location description and accuracy:**

The BLT prospect is at an elevation of about 3,650 feet on the west bank of the head of Bryn Mawr Creek, a northeast-flowing tributary of the West Fork Chulitna River. The map site is on the east edge of sec. 4, T. 20 S., R. 11 W., of the Fairbanks Meridian. Access is via dirt road from Colorado Station along the north side of the West Fork Chulitna River to the junction with Bryn Mawr Creek. The road crosses the West Fork Chulitna River and climbs southwesterly to the Golden Zone mine (HE043), which adjoins the BLT prospect on the north. The location is accurate to within 1,000 feet.

**Commodities:****Main:** Ag, Au**Other:** Cu, Pb, Zn**Ore minerals:** Arsenopyrite, chalcopyrite, galena, sphalerite, tetrahedrite**Gangue minerals:** Ankerite, calcite, marcasite, quartz, sericite**Geologic description:**

BLT is the name given to the prospect that includes the Blind, Little, and Tunnel veins near the Golden Zone mine (HE043) (C.C. Hawley, oral communication, 1999). The veins and a strongly altered mafic dike are in a shear zone that defines the southeast margin of the Golden Zone porphyry. The shear zone and mafic dike cut Triassic redbed sandstone, conglomerate, limestone, and volcanoclastic rocks. The shear zone-dike (BLT zone) also cuts the quartz-biotite porphyry associated with the Golden Zone breccia pipe. The BLT prospect consists of early, arsenopyrite-rich quartz veins, followed by quartz-carbonate-sulfide veins, stockwork zones, and massive sulfide lenses. The veins are colloform and banded, indicating an epithermal depositional environment. Sulfide phases in the BLT differ from those in the Golden Zone, in that they contain more pyrite and marcasite, more lead and zinc, and less copper. Only the younger, sulfide-quartz-carbonate veins that locally cut the arsenopyrite-rich veins contain free gold. The arsenopyrite-rich veins probably correlate with the Upper Cretaceous veins at the Golden Zone mine (unpublished report by Addwest Minerals International Ltd., 1997).

**Alteration:**

Clays, ankerite/calcite, and quartz are the dominant alteration assemblages in the mafic dikes.

**Age of mineralization:**

Late Cretaceous and younger.

**Deposit model:**

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

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

22c

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Underground work encountered the Blind Vein in the 1970's. 19 drill holes (totalling over 6,000 feet) have been completed up to the present (1999), along with widespread trenching and soil geochemistry grids. Closely-spaced helicopter aeromagnetic and EM geophysical surveys have been flown over this prospect. The State of Alaska flew a more widely-spaced helicopter aeromagnetic survey in 1996 (Burns, 1997).

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

Ross, 1933; Wells, 1956; Berg and Cobb, 1967; Mulligan and others, 1967; Hawley and Clark, 1974; Hawley and others, 1978.

**Primary reference:** Hawley and others, 1978

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Little Vein; Little Lead****Site type:** Prospect**ARDF no.:** HE045**Latitude:** 63.213**Quadrangle:** HE A-6**Longitude:** 149.647**Location description and accuracy:**

The Little Vein prospect is at an elevation of about 3,500 feet, on the southeast bank of Bryn Mawr Creek. The site is in sec. 3, T. 20 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 500 feet.

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

The Little Vein prospect is about 200 feet south of the Golden Zone breccia pipe (HE043). It is a quartz-sulfide vein and stringer lode that carries good, but erratic, gold values. The deposit is at the sheared contact of a quartz-biotite porphyry dike that intrudes hornfelsed Triassic sedimentary rocks. The sulfide minerals are arsenopyrite, pyrite, and chalcopyrite. Assay values range from 0.16 to 2.58 ounces of gold per ton, 2.4 to 11.6 ounces of silver per ton, and up to 33.22% arsenic (Ross, 1933). The Little Vein deposit probably is a continuation of the deposit at the Golden Zone mine.

**Alteration:**

Sericitization.

**Age of mineralization:**

Synchronous with the Golden Zone mineralization, dated as Late Cretaceous.

**Deposit model:**

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

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

22c

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

There has been limited exploration by prospect pits and a short, now caved adit. Assay values range from 0.16 to 2.58 ounces of gold per ton, 2.4 to 11.6 ounces of silver per ton, and up to 33.22% arsenic (Ross, 1933).

**Production notes:**

**Reserves:**

**Additional comments:**

The Little Vein was reached from underground workings at the Golden Zone mine.

**References:**

Ross, 1933; Berg and Cobb, 1967; Hawley and Clark, 1974.

**Primary reference:** Hawley and Clark, 1974

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Lindfors****Site type:** Prospect**ARDF no.:** HE046**Latitude:** 63.208**Quadrangle:** HE A-6**Longitude:** 149.653**Location description and accuracy:**

The Lindfors prospect is at an elevation of about 3,900 feet on the divide at the head of Bryn Mawr Creek. It is in the SE1/4 of sec. 4, T. 20 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 500 feet. This is location 11 of Cobb (1978: OFR 78-1062).

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

The Lindfors prospect is about 1,500 feet south-southwest of the Golden Zone mine (HE043). The country rocks at the prospect are Permo-Triassic redbed sandstones, conglomerates, limestones and volcanoclastic sediments, which are intruded by Upper Cretaceous quartz diorite dikes. The deposit consists of quartz veins containing arsenopyrite, chalcopyrite, galena, pyrite, sphalerite, and tetrahedrite. Surface geochemistry values of 0.2 to 14 ppm gold, high silver, arsenic, lead, antimony and zinc have been reported (Hawley and Clark, 1974). The Lindfors deposit probably is a continuation of the deposit at the Golden Zone mine.

**Alteration:**

Quartz, sericite?, and pyrite.

**Age of mineralization:**

Synchronous with the Golden Zone mineralization, dated as Late Cretaceous.

**Deposit model:**

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

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

22c

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

One drill hole has explored the Lindfors zone at depth; there is a report of a shallow shaft, now collapsed, dug in the 1920's. Surface exploration consists of numerous pits and trenches. Close-spaced helicopter aeromagnetic and EM geophysical surveys have been flown over this prospect. In 1996, the State of Alaska flew a wider-spaced helicopter aeromagnetic survey that included this prospect (Burns, 1997).

Surface geochemistry values of 0.2 to 14 ppm gold, high silver, arsenic, lead, antimony and zinc have been reported (Hawley and Clark, 1974).

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

Capps, 1919; Ross, 1933; Hawley and others, 1968 (OFR 68-305); Hawley and Clark, 1974; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Hawley and Clark, 1974**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s): Silverdikes****Site type:** Occurrence**ARDF no.:** HE047**Latitude:** 63.21**Quadrangle:** HE A-6**Longitude:** 149.61**Location description and accuracy:**

The Silverdikes prospect is at an elevation of about 2,900 feet, about 1.7 miles southwest of Lookout Mountain. The map site is in the SW1/4 of sec. 2, T. 20 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within one mile.

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

The Silverdikes prospect is on the Chulitna fault. The country rocks are Upper Jurassic to Upper Triassic crystal tuff, argillite, graywacke, and chert, cut by Upper Cretaceous or Lower Tertiary, fine-grained quartz porphyry dikes. The deposit apparently consists of galena- and sphalerite-bearing quartz veins, but their hostrock is not specified. The dikes contain disseminated pyrite. Geochemically anomalous silver, lead and zinc values are reported (unpublished report, Addwest Minerals International, Ltd, 1997). The Silverdikes prospect closely resembles the deposit at Lookout Mountain (HE032).

**Alteration:**

Minor sericitic-phyllitic alteration reported.

**Age of mineralization:**

Late Cretaceous or younger.

**Deposit model:**

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

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

22c



**Production Status:** None

**Site Status:** Active

**Workings/exploration:**  
Surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**  
Also see Lookout Mountain (HE032).

**References:**  
Unpublished report, Addwest Minerals International, Ltd, 1997.

**Primary reference:** Unpublished report, Addwest Minerals International, Ltd, 1997

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (upper Blind Creek area)

**Site type:** Occurrence

**ARDF no.:** HE048

**Latitude:** 63.212

**Quadrangle:** HE A-6

**Longitude:** 149.692

**Location description and accuracy:**

This occurrence is at an elevation of about 3,800 feet south of upper Blind Creek, a tributary of the West Fork Chulitna River. It is in the NE1/4 of sec. 5, T. 20 S., R. 11 W., of the Fairbanks Meridian. Accuracy is to within 1,000 feet. The site is shown in Hawley and Clark (1968), and Hawley and Clark (1974).

**Commodities:**

**Main:** Ag, Au

**Other:**

**Ore minerals:** Gold?, pyrite

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of this occurrence are Triassic sedimentary strata that have been strongly faulted along a strand of the Blind Creek fault. The fault zone is up to 200 feet wide and approximately 3000 feet long; it is locally pyritized and limonite stained. The deposit consists of quartz-pyrite veins. The quartz is colloform in places. Surface samples from a quartz vein contained 0.06 ppm to 0.30 ppm gold and 0.5 to 1.5 ppm silver (Hawley and Clark, 1968).

**Alteration:**

Pyritization; iron-staining.

**Age of mineralization:**

**Deposit model:**

Polymetallic vein or Hot-spring Ag-Au (Cox and Singer, 1986; models 22c, 25a)

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

22c, 25a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface samples only. Surface samples from a quartz vein contained 0.06 ppm to 0.30 ppm gold and 0.5 to 1.5 ppm silver (Hawley and Clark, 1968).

**Production notes:**

**Reserves:**

**Additional comments:**

This deposit is similar in some ways to the Bunkhouse and Lupin deposits (HE039 and HE038).

**References:**

Hawley and Clark, 1968; Hawley and Clark, 1974.

**Primary reference:** Hawley and Clark, 1974

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Copper King; Hector Group****Site type:** Prospect**ARDF no.:** HE049**Latitude:** 63.196**Quadrangle:** HE A-6**Longitude:** 149.655**Location description and accuracy:**

The Copper King prospect is at an elevation of about 3,500 feet near the head of Long Creek. The site is near the east boundary of sec. 9 , T. 20 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 0.25 mile.

**Commodities:****Main:** Ag, Au, Cu**Other:** Mo, Zn**Ore minerals:** Chalcopyrite, molybdenite, pyrite, pyrrhotite**Gangue minerals:** Quartz, skarn minerals**Geologic description:**

Copper King is primarily a skarn prospect. The country rocks are hornfelsed Permo-Triassic calcareous siltstone and conglomerate that are intruded by Upper Cretaceous(?) quartz porphyry dikes. The deposit consists chiefly of massive chalcopyrite, pyrite, and pyrrhotite in a skarn zone 20 to 40 feet thick exposed for about 200 feet at the surface. Subsidiary zones of quartz stockwork veining and of sulfide disseminations also occur (unpublished report by Addwest Minerals International Ltd., 1997). The pattern of mineralization suggests a zonal distribution of Cu around quartz porphyry intrusions. This is the only prospect in the district explored primarily for copper, and is also the only prospect in the area where arsenopyrite has not been found (Hawley and Clark, 1974). In addition, molybdenite is more abundant here than at the other prospects. Samples taken at various times contain as much as 7.34% copper, 4.9 ounces of silver per ton, and 0.22 ounce of gold per ton (Cobb, 1978: OFR 78-1062).

**Alteration:**

Skarn zones contain diopside, epidote, sericite, and anhydrite.

**Age of mineralization:**

Late Cretaceous(?).

**Deposit model:**

Cu skarn (Cox and Singer, 1986; model 18b)

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

18b

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Workings include soil grids, 1,500 feet of trenching and 9 drill holes with over 1,700 feet completed. A limited, ground-based TEM survey has also been used to outline skarn zones. Samples taken at various times contain as much as 7.34% copper, 4.9 ounces of silver per ton, and 0.22 ounce of gold per ton (Cobb, 1978: OFR 78-1062).

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

Capps, 1919; Ross, 1933; Berg and Cobb, 1967; Hawley and Clark, 1968; Clark and Cobb, 1972; Hawley and Clark, 1974; Cobb, 1978 (OFR 78-1062); Balen, 1990 (OFR 34-90); Kurtak and others, 1992.

**Primary reference:** Hawley and Clark, 1974

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

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

**Site type:** Prospect

**ARDF no.:** HE050

**Latitude:** 63.18

**Quadrangle:** HE A-6

**Longitude:** 149.67

**Location description and accuracy:**

The Long Creek prospect is at an elevation of 3,700 feet, about a mile west of Long Creek approximately 7 miles upstream from its junction with the West Fork Chulitna River. The map site is near the center of sec. 16, T. 20 S., R. 11 W., of the Fairbanks Meridian. This is locality 15 of Cobb (1978: OFR 78-1062).

**Commodities:**

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

**Other:**

**Ore minerals:** Arsenopyrite, chalcopyrite, galena, pyrite, sphalerite

**Gangue minerals:** Quartz

**Geologic description:**

This prospect is near the faulted contact between Devonian mafic intrusive rocks and Upper Devonian to Lower Triassic tuffaceous chert, volcanic conglomerate, graywacke and shale, and limestone (Wilson and others, 1998). Both units are intruded by Upper Cretaceous (?) porphyry dikes. The deposit consists of massive quartz-arsenopyrite veins that also contain minor amounts of galena, sphalerite, pyrite and chalcopyrite. In addition to the veins, rocks also contain up to 2% disseminated sulfides in a 600- feet by 300-foot area.

**Alteration:**

**Age of mineralization:**

Probably Late Cretaceous (?) or younger, assuming that the deposit is related to the diorite dikes.

**Deposit model:**

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

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

22c

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Surface trenches and soil grids.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Ross, 1933; Hawley and others, 1969; Clark and Cobb, 1972; Hawley and Clark, 1973; Hawley and Clark, 1974; Cobb, 1978 (OFR 78-1062); Hawley and others, 1978; Kurtak and others, 1988; Balen, 1990 (OFR 34-90); Kurtak and others, 1992; Wilson and others, 1998.

**Primary reference:** Hawley and Clark, 1974

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south of upper Long Creek)

**Site type:** Prospect

**ARDF no.:** HE051

**Latitude:** 63.18

**Quadrangle:** HE A-6

**Longitude:** 149.69

**Location description and accuracy:**

This prospect is at an elevation of 400 feet south of upper Long Creek. The site is in sec. 17, T. 20 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 1 mile. This is loc. 12 of Hawley and others (1969); loc. 35 of Hawley and Clark (1974).

**Commodities:**

**Main:** Au, Cu

**Other:** Cr, Ni, Pt

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

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this prospect consist largely of sheared, Devonian serpentinite that forms lenticular and podiform tectonic blocks as much as several hundred meters in size. The deposit is in serpentinite, and consists of pyrite-rich pods, locally accompanied by chalcopyrite and gold-rich zones. Local high platinum, chrome, and nickel values have also been reported. Samples contain up to 0.3 ppm gold, 1,500 ppm chromium, 3,000 ppm copper, 1,500 ppm nickel, and a trace of platinum (Hawley and others, 1969).

**Alteration:**

**Age of mineralization:**

The copper and chromium minerals probably were syngenetic with their Devonian ultramafic hostrock, and may have been partly redistributed during serpentinization.

**Deposit model:**

Podiform chromite (Cox and Singer, 1986; model 8a)

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

8a



**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface sampling only. Local high platinum, chrome, and nickel values have also been reported. Samples contain up to 0.3 ppm gold, 1,500 ppm chromium, 3,000 ppm copper, 1,500 ppm nickel, and a trace of platinum (Hawley and others, 1969).

**Production notes:**

**Reserves:**

None of the sulfide bodies appears to be of any significant size.

**Additional comments:**

**References:**

Hawley and others, 1969; Hawley and Clark, 1974.

**Primary reference:** Hawley and others, 1969

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Alaska Jupiter****Site type:** Prospect**ARDF no.:** HE052**Latitude:** 63.16**Quadrangle:** HE A-6**Longitude:** 149.67**Location description and accuracy:**

The Alaska Jupiter prospect is at an elevation of about 3,800 feet, on the north side of a divide between upper Copeland and Long creeks. The map site is in the SW1/4 of sec. 21, T. 20 S., R. 11 W., of the Fairbanks Meridian. The accuracy of the location is within 1.5 miles. This is location E-26 of Balen (1990: OFR 34-90).

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

The country rocks at the Alaska Jupiter prospect include Upper Jurassic to Upper Triassic crystal tuff, argillite, graywacke and chert, and Upper Cretaceous (?) porphyry dikes. The rocks are cut by the Chulitna fault. The deposit is along the fault, and consists of quartz-arsenopyrite veins that cut both the bedded and intrusive rocks. Samples contain gold near the 5 ppb detection limits of the analysis (Balen, 1990: OFR 34-90).

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

Probably Late Cretaceous or younger.

**Deposit model:**

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

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

36a

**Production Status:** None

**Site Status:** Active?

**Workings/exploration:**

There has only been surface sampling.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Copper Kitty****Site type:** Prospect**ARDF no.:** HE053**Latitude:** 63.15**Quadrangle:** HE A-6**Longitude:** 149.71**Location description and accuracy:**

The Copper Kitty prospect is at an elevation of about 3,000 feet on the west wall of the valley of upper Copeland Creek. The map site is about 7 miles north of the junction of Copeland and Ohio creeks, in the Sw1/4 of sec. 29, T. 20 S., R. 11 W., of the Fairbanks Meridian. The location is accurate to within 0.5 mile. This is location E-28 of Balen (1990: OFR 34-90).

**Commodities:****Main:** Ag, Cu**Other:** Au(?), Cr**Ore minerals:****Gangue minerals:****Geologic description:**

The country rocks in the area of the Copper Kitty prospect are a tectonically mixed assemblage of Upper Devonian serpentinite, and subordinate basalt, chert, and gabbro. The deposit reportedly consists of pods of unspecified sulfide minerals, locally containing copper, gold(?) and silver (Balén, 1990: OFR 34-90). The hostrocks of the sulfide minerals also are not specified. Chromite apparently also occurs, presumably as magmatic segregations in the ultramafic rocks.

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

The (presumed) magmatic segregation are syngenetic with the Upper Devonian ultramafic host rocks.

**Deposit model:**

Podiform chromite(?), Cyprus massive sulfide(?) (Cox and Singer, 1986; model 8a, 24a)

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

8a(?), 24a(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Silver Kitty; Christy; Copeland Creek

**Site type:** Prospect

**ARDF no.:** HE054

**Latitude:** 63.164

**Quadrangle:** HE A-6

**Longitude:** 149.786

**Location description and accuracy:**

The Silver Kitty prospect is at an elevation of about 5,500 feet, above the north head of Christy Creek. The site is in the SE1/4 of sec. 23, T. 20 S., R. 12 W., of the Fairbanks Meridian. Accuracy of location is within 0.25 miles. This is locality 9-12 of Hawley and others (1969); and locality 27 of Hawley and Clark (1974).

**Commodities:**

**Main:** Ag, Au, Cu

**Other:** Zn

**Ore minerals:** Chalcopyrite, sphalerite

**Gangue minerals:** Quartz, skarn minerals

**Geologic description:**

The Silver Kitty prospect is hosted in Lower Jurassic and Upper Triassic redbed sandstone and argillite. An Upper Cretaceous quartz diorite porphyritic stock cuts the argillite. The prospect consists of chalcopyrite- and sphalerite-bearing skarn adjacent to the stock (Hawley and Clark, 1974), along with some disseminated sulfides. Samples contain 0.4 ounce of gold per ton and 1.8% copper (Balen, 1990: OFR 34-90).

**Alteration:**

Skarn related.

**Age of mineralization:**

Probably Late Cretaceous.

**Deposit model:**

Cu skarn (Cox and Singer, 1986; model 18b)

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

18b

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**  
Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Hawley and others, 1969; Clark and Cobb, 1972; Hawley and Clark, 1974; Balen, 1990 (OFR 34-90); Kurtak and others, 1992.

**Primary reference:** Hawley and Clark, 1974

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

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

**Site type:** Prospect

**ARDF no.:** HE055

**Latitude:** 63.16

**Quadrangle:** HE A-6

**Longitude:** 149.86

**Location description and accuracy:**

The Canyon Creek prospect is at an elevation of about 4,700 feet on a spur west of upper Canyon Creek, a northern tributary to Ohio Creek. The map site is at the north-central boundary of sec. 28, T. 20 S., R. 12 W., of the Fairbanks Meridian. This is locality 19 of Cobb (1978: OFR 78-1062).

**Commodities:**

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

**Other:** Sn

**Ore minerals:** Arsenopyrite, chalcopyrite, pyrite, tetrahedrite

**Gangue minerals:** Calcite, quartz

**Geologic description:**

The country rocks in the area consist of several hundred meters of Triassic limestone and marble interbedded with basalt, metachert, and argillite. The strata are intruded by quartz diorite porphyry dikes of probable Late Cretaceous to Early Tertiary age and by Tertiary tourmaline-bearing granite. The Canyon Creek deposit is in the Upper triassic rocks, and consists of quartz-calcite veins containing arsenopyrite, chalcopyrite, pyrite and tetrahedrite. Rock chip samples contain up to 0.4 ppm gold and 500 ppm silver, along with consistently high Sn values.

The Canyon Creek deposit is part of an area of sulfide deposits 2.5 miles long and 1 mile wide along and near Canyon Creek. The Canyon Creek prospect is in the northern part of this area. The Ready Cash prospect (HE057) is in southern part.

**Alteration:**

**Age of mineralization:**

Late Cretaceous or younger, assuming that the deposit is related to the intrusive rocks.

**Deposit model:**

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



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

22c

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

Surface exploration only. Rock chip samples contain up to 0.4 ppm gold and 500 ppm silver, along with consistently high Sn values.

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

Hawley and others, 1969; Hawley and Clark, 1974.

**Primary reference:** Hawley and Clark, 1974**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s):** Unnamed (head of Ohio Creek)

**Site type:** Prospect

**ARDF no.:** HE056

**Latitude:** 63.19

**Quadrangle:** HE A-6

**Longitude:** 149.93

**Location description and accuracy:**

The prospect is at an elevation of about 3,500 feet at the northwest edge of the glacial moraine at the head of Ohio Creek. The site is on the boundary of secs. 7 and 18, T. 20 S., R. 12 W., of the Fairbanks Meridian. The accuracy of the location is within 0.5 mile. This is locality 18 of Cobb (1978, OFR 78-1062).

**Commodities:**

**Main:** Ag, Sn

**Other:** Au, Cu, Nb, Ta, W, Zn

**Ore minerals:** Arsenopyrite, cassiterite, gold?, wodginite

**Gangue minerals:** Feldspar, muscovite, quartz, tourmaline

**Geologic description:**

The host rock at this prospect is Upper Cretaceous to Upper Jurassic, intensely deformed and locally highly metamorphosed flysch which is several thousand meters thick (Wilson and others, 1998). The strata have been intruded by a granitic stock 1 mile long by 0.5 mile wide. The deposit consists of tourmaline and muscovite greisen and quartz-arsenopyrite veins. The greisen is up to 10 feet thick. It adjoins a biotite-rich inclusion at least 150 feet long, and locally contains 0.1% Sn (Hawley and others, 1969). The upper 3 to 10 feet of the granitic body contains pegmatitic quartz-arsenopyrite veins that parallel the contact with country rock (Hawley and Clark, 1974). The veins also contain wodginite, a manganese-tin-niobium oxide, and 1.25% tungsten, 147 ounces of silver per ton and traces of tin, lead, and copper (Hawley and others, 1978).

**Alteration:**

Greisenization.

**Age of mineralization:**

Late Cretaceous or younger.

**Deposit model:**

Sn greisen (Cox and Singer, 1986; model 15c)

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

15c

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been minor surface exploration. Veins contain wodginite, a manganese-tin-niobium oxide, and 1.25% tungsten, 147 ounces of silver per ton and traces of tin, lead, and copper (Hawley and others, 1978).

**Production notes:**

**Reserves:**

**Additional comments:**

Stream sediment samples taken from area adjacent to granitic stock suggest undiscovered vein deposits in country rock.

**References:**

Capps, 1919; Capps, 1924; Ross, 1933; Hawley and others, 1969; Clark and Cobb, 1972; Hawley and Clark, 1974; Hawley and others, 1978; Cobb, 1978 (OFR 78-1062); Balen, 1990 (OFR 34-90); Nokleberg and others, 1994; Wilson and others, 1998.

**Primary reference:** Hawley and others, 1978

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Ready Cash****Site type:** Prospect**ARDF no.:** HE057**Latitude:** 63.15**Quadrangle:** HE A-6**Longitude:** 149.86**Location description and accuracy:**

The Ready Cash prospect is at an elevation of about 2,700 feet on Canyon Creek, a northern tributary to Ohio Creek. The map site is in the SW1/4 of sec. 28, T. 20 S., R. 12 W., of the Fairbanks Meridian. This is locality 21 of Cobb (1978: OFR 78-1062).

**Commodities:****Main:** Ag, Au, Cu, Pb, Sn, Zn**Other:** Sb**Ore minerals:** Argentite, arsenopyrite, cassiterite, chalcopyrite, covellite, galena, pyrite, pyrrhotite, sphalerite, tennantite, tetrahedrite**Gangue minerals:** Calcite, quartz**Geologic description:**

The country rocks in the area of the Ready Cash prospect consist of several hundred meters of Upper Triassic interbedded limestone, marble, basalt, metachert, and argillite. The strata are intruded by quartz diorite porphyry dikes of probable Late Cretaceous to Early Tertiary age, and by Tertiary tourmaline-bearing granite. The Ready Cash prospect consists of quartz-calcite-sulfide veins, and pods of skarn. The ore minerals consist chiefly of arsenopyrite, pyrite, chalcopyrite, galena and sphalerite, accompanied by minor amounts of tetrahedrite, tennantite, argentite, and cassiterite. The skarn consists of pyrite, pyrrhotite and chalcopyrite in a matrix of calc-silicate minerals and sparse quartz. The deposit can be subdivided into: a) copper-rich pods of skarn having grades of 0.5 to 0.9% copper (Hawley and Clark, 1974); b) arsenopyrite-quartz veins, containing 0.08 ounce of gold per ton, 1.06 ounce of silver per ton, and 0.33% copper; and c) high silver-lead-tin veins containing up to 20.8 ounces of silver per ton, 4.0% lead, and 0.5% tin (Hawley and others, 1978). The several types of deposits may be related to two or more magmatic events in the area.

The deposit at the Ready Cash prospect is more or less continuous with the deposit at the Canyon Creek prospect (HE055), encompassing an area about 2.5 miles long and 1 mile wide.

**Alteration:**

There probably have been multiple alteration events; including skarn formation and silicification.

**Age of mineralization:**

Probably Late Cretaceous and (or) younger.

**Deposit model:**

Cu skarn and younger Ag-Pb-Sn veins (Cox and Singer, 1986; models 18b, 15b)

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

18b, 15b

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

Both surface and underground workings. Two tunnels, 170 feet and 75 long feet have been driven and there are several prospect pits.

The deposit can be subdivided into: a) copper-rich pods of skarn having grades of 0.5 to 0.9% copper (Hawley and Clark, 1974); b) arsenopyrite-quartz veins, containing 0.08 ounce of gold per ton, 1.06 ounce of silver per ton, and 0.33% copper; and c) high silver-lead-tin veins containing up to 20.8 ounces of silver per ton, 4.0% lead, and 0.5% tin (Hawley and others, 1978).

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

The two principal silver-rich veins on the prospect contain approximately 200,000 tons of ore carrying 10 to 20 ounces of silver per ton and 0.5% tin (C. Hawley, personal communication, 1999). This estimate does not include the skarn deposits.

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

Thurmond, 1918; Capps, 1919; Ross, 1933; Saunders, 1954; Berg and Cobb, 1967; Hawley and others, 1969; Clark and Cobb, 1972; Hawley and Clark, 1973; Hawley and Clark, 1974; Hawley and others, 1978; Cobb, 1978 (OFR 78-1062); Kurtak and others, 1988; Balen, 1989; Balen, 1990 (OFR 34-90).

**Primary reference:** Hawley and Clark, 1974**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s):** Unnamed (divide between Christy and Copeland creeks)

**Site type:** Occurrence

**ARDF no.:** HE058

**Latitude:** 63.13

**Quadrangle:** HE A-6

**Longitude:** 149.75

**Location description and accuracy:**

This occurrence is at an elevation of about 5,200 feet, about midway between the middle reaches of Christy and Copeland Creeks. The map site is about 1.3 mile north of VABM 5048 (Copeland), in the NE1/4 of sec. 1, T. 21 S., R. 12 W., of the Fairbanks Meridian. The location is accurate to within 0.5 mile. This is location 22 of Cobb (1978: OFR 78-1062), and location E-29 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Cr

**Other:** Ni, Pt

**Ore minerals:** Chromite, garnierite, pyrite

**Gangue minerals:** Serpentine

**Geologic description:**

The country rocks in the area of this occurrence are a tectonically mixed assemblage of Upper Devonian serpentinite, basalt, chert, and gabbro. The occurrence consists of talus blocks of serpentinite(?) containing pods of massive chromite. The blocks occur in an area underlain by serpentinite altered to quartz-carbonate rock containing disseminated pyrite and stained with garnierite. Samples comprising 95% chromite contain 39.5% Cr<sub>2</sub>O<sub>3</sub> and a chromium/iron ratio of 3.1:1, along with traces of platinum group metals (principally rhenium) and 1,000 ppm nickel (Hawley and others, 1969). The platinum values in eight samples were at the lower limit of detection (Balen, 1990: OFR 34-90).

**Alteration:**

Serpentinization of ultramafic intrusive rocks. The serpentinite is altered to quartz-carbonate rock containing disseminated pyrite and stained with garnierite.

**Age of mineralization:**

Chromite probably was a magmatic segregation in Upper Devonian ultramafic intrusive rocks.

**Deposit model:**

Podiform chromite (Cox and Singer, 1986; model 8a)

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

8a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been surface sampling only. Samples comprising 95% chromite contain 39.5% Cr<sub>2</sub>O<sub>3</sub> and a chromium/iron ratio of 3.1:1, along with traces of platinum group metals (principally rhenium) and 1,000 ppm nickel (Hawley and others, 1969). The platinum values in eight samples were at the lower limit of detection (Balén, 1990: OFR 34-90).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Hawley and others, 1969 (C 617); Hawley and Clark, 1974; Cobb, 1978 (OFR 78-1062); Balén, 1990 (OFR 34-90).

**Primary reference:** Hawley and others, 1969

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Metals (claim group)****Site type:** Prospect**ARDF no.:** HE059**Latitude:** 63.12**Quadrangle:** HE A-6**Longitude:** 149.92**Location description and accuracy:**

The Metals prospect is at an elevation of about 5,300 feet on the north wall of the valley of upper McCallie Creek. The map site is on the boundary of Denali National Park and Preserve, in the NW1/4 of sec. 6, T. 21 S., R. 12 W., of the Fairbanks Meridian. The accuracy of this location is within 1 mile. This is location E-33 from Balen (1990: OFR 34-90).

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

The country rocks in the area of the Metals prospect are Upper Triassic limestone and basalt flows. The deposit is in these bedded rocks and apparently consists of arsenopyrite (?) disseminations and arsenopyrite(?) -bearing quartz(?) stockwork veinlets. Geochemical analyses show that this is primarily a gold prospect (Balen 1990: OFR 34-90).

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

Late Triassic or younger.

**Deposit model:**

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

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

22c?

**Production Status:** None



**Site Status:** Inactive

**Workings/exploration:**  
Surface samples only.

**Production notes:**

**Reserves:**

**Additional comments:**  
Alternate names are the Methalss Claim Group, McCallie Creek Mining.

**References:**  
Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): McCallie Creek****Site type:** Occurrences**ARDF no.:** HE060**Latitude:** 63.11**Quadrangle:** HE A-6**Longitude:** 149.85**Location description and accuracy:**

Occurrences of placer gold are on McCallie Creek, an east-flowing tributary of Ohio Creek. The occurrences extend from the mouth of McCallie Creek upstream to the map site, which is in the Se1/4 of sec. 9, T. 21 S., R. 12 W., of the Fairbanks Meridian. This is location E-32 of Balen (1990: OFR 34-90) and is accurate to within 1 mile.

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

McCallie Creek hosts several placer gold occurrences. Its drainage area includes Upper Triassic limestone and basalt, in thrust contact with Lower Jurassic and Upper Triassic sandstone, siltstone, argillite, and conglomerate (Wilson and others, 1998). In places, these units are cut by several generations of veins related to Upper Cretaceous or Lower Tertiary plutons. The placer gold probably was derived from the erosion of such veins.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Probably inactive

**Workings/exploration:**  
Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Kurtak and others, 1992; Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south of head of McCallie Creek)

**Site type:** Prospect

**ARDF no.:** HE061

**Latitude:** 63.10

**Quadrangle:** HE A-6

**Longitude:** 149.96

**Location description and accuracy:**

This prospect is at an elevation of about 5,400 feet, on a ridge above the valley glaciers south of the head of McCallie Creek. The map site is about 0.5 mile south-south-west of peak 5480, in the NW1/4 of sec. 13, T. 21 S., R. 3 W., of the Fairbanks Meridian. The accuracy of the location is within 1 mile. This is location E-31 of Balen (1990: OFR 34-90).

**Commodities:**

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

**Other:** Cu

**Ore minerals:** Arsenopyrite, chalcopyrite, galena, sphalerite, stibnite

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks at this prospect are Upper Triassic limestone and basalt flows. The deposit consists of disseminated sulfides in the country rocks, and a stockwork of sulfide-bearing quartz veinlets. The sulfide minerals are arsenopyrite, stibnite, chalcopyrite, galena, and sphalerite. The stockwork is about 100 feet wide, and is open along strike.

Analyses of 27 samples gave maximum values of 0.9 ounces of gold per ton, 4.4 ounces of silver per ton, 1.8 percent lead, 1.2 percent zinc and 4 percent antimony (Balen, 1990: OFR 34-90).

**Alteration:**

Gossan developed at surface.

**Age of mineralization:**

Late Triassic or younger.

**Deposit model:**

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

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

22c

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

There has only been surface sampling.

**Production notes:**

**Reserves:**

**Additional comments:**

This deposit was discovered during regional geologic reconnaissance by the Bureau of Land Management (Balen and others, 1991).

**References:**

Balen, 1990 (OFR 34-90); Balen and others, 1991.

**Primary reference:** Balen and others, 1991

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (northeast of upper Partin Creek)

**Site type:** Prospect

**ARDF no.:** HE062

**Latitude:** 63.066

**Quadrangle:** HE A-6

**Longitude:** 149.959

**Location description and accuracy:**

This prospect is at an elevation of about 5,000 feet, on the northeast wall of the valley of upper Partin Creek. The map site is in the SW1/4 of sec. 25, T. 21 S., R. 13 W., of the Fairbanks Meridian. The location is known to within 0.25 mile. This is location 23 of Cobb (1978: OFR 78-1062).

**Commodities:**

**Main:** Ag, Au, Cu

**Other:** Sb

**Ore minerals:** Arsenopyrite, chalcopyrite, pyrite, pyrrhotite, stibnite

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of this prospect are Upper Triassic limestone and basalt cut by Upper Cretaceous or Lower Tertiary biotite-quartz diorite porphyry. The deposit consists of auriferous skarn containing pyrite, pyrrhotite, chalcopyrite, arsenopyrite, and stibnite. Gold grades are higher near the intrusive contact. Samples contain up to 0.2 ounces of gold per ton and 0.7 percent copper (Hawley and Clark, 1974).

**Alteration:**

Formation of skarn at intrusive contacts.

**Age of mineralization:**

Probably Late Cretaceous or younger.

**Deposit model:**

Cu skarn (Cox and Singer, 1986; model 18b)

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

18b

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

There has been limited exploration consisting of shallow trenches and rock chip samples.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Hawley and others, 1969; Clark and Cobb, 1972; Hawley and Clark, 1973; Hawley and Clark, 1974; Hawley and others, 1978; Cobb, 1978 (OFR 78-1062); Balen, 1990 (OFR 34-90); Kurtak and others, 1992.

**Primary reference:** Hawley and others, 1969

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (divide between upper Partin and Shotgun creeks)

**Site type:** Prospect

**ARDF no.:** HE063

**Latitude:** 63.071

**Quadrangle:** HE A-6

**Longitude:** 149.952

**Location description and accuracy:**

This prospect is at an elevation of 6,000 feet on the divide between upper Partin and upper Shotgun creeks. It is in the north-central part of sec. 25, T. 21 S., R. 13 W., of the Fairbanks Meridian. The location of this prospect is known to within 0.25 miles. This is location 24 of Cobb (1978: OFR 78-1062). It is identified by Hawley and others (1978), and incorporated with locality E-34 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Ag, Au, Cu

**Other:** Sb

**Ore minerals:** Arsenopyrite, chalcopyrite, pyrite, pyrrhotite, stibnite

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of the prospect consists of several hundred meters of Upper Triassic limestone and marble, interbedded with altered, amygdaloidal basalt. The strata are intruded by biotite-quartz diorite porphyry of Late Cretaceous to Early Tertiary age. The deposit consists predominantly of skarn bodies, up to 440 feet long and 3 to 20 feet thick, in an area about 3,000 feet long and 1,000 feet wide. The skarn contains pyrrhotite, up to 5% chalcopyrite, and as much as 2 ounces of gold per ton. Arsenopyrite and stibnite occur both in the skarn and in quartz-arsenopyrite-stibnite veins. Samples from shallow trenches contain up to 0.7% copper, 0.7% antimony, 300 ppm silver, and 63 ppm gold.

**Alteration:**

High temperature skarn.

**Age of mineralization:**

Late Cretaceous or younger.

**Deposit model:**



Cu skarn (Cox and Singer, 1986; model 18b)

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

18b

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

There has been surface exploration only. The skarn contains pyrrhotite, up to 5% chalcopyrite, and as much as 2 ounces of gold per ton. Arsenopyrite and stibnite occur both in the skarn and in quartz-arsenopyrite-stibnite veins. Samples from shallow trenches contain up to 0.7% copper, 0.7% antimony, 300 ppm silver, and 63 ppm gold.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Hawley and others, 1969; Clark and Cobb, 1972; Hawley and Clark, 1973; Hawley and Clark, 1974; Hawley and others, 1978; Cobb, 1978 (OFR 78-1062); Balen, 1990 (OFR 34-90); Kurtak and others, 1992.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (northeast of upper Shotgun Creek)

**Site type:** Prospect

**ARDF no.:** HE064

**Latitude:** 63.07

**Quadrangle:** HE A-6

**Longitude:** 149.86

**Location description and accuracy:**

The prospect is at an elevation of about 5,000 feet on the divide about a mile northeast of upper Shotgun Creek. The map site is on the boundary of secs. 21 and 28, T. 21 S., R. 12 W., of the Fairbanks Meridian. The location is accurate to within 1 mile. This is location 36-C of Hawley and Clark (1974); locality 25 of Cobb (1978: OFR 78-1062); and locality E35 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Ag, Au, Cu

**Other:** Pt, Cr

**Ore minerals:** Chalcopyrite, chromite

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this prospect consist largely of sheared, Devonian serpentinite that forms lenticular and podiform tectonic blocks as much as several hundred meters in size. The prospect consists of chalcopyrite-rich sulfide bodies in the serpentinite. Chromite pods also occur in the serpentinite and platinum group elements may be present. Three samples contained 0.7 ppm silver, 0.04 to 0.06 ppm gold, 300 to 1,500 ppm chromium, 70 to 7,000 ppm copper, 100 to 1,000 ppm nickel, and a trace of platinum (Hawley and others, 1969).

**Alteration:**

Serpentinite of ultramafic hostrocks.

**Age of mineralization:**

The ore minerals probably were magmatic segregations in Devonian ultramafic hostrocks, and were partly redistributed during subsequent serpentization.

**Deposit model:**

Podiform chromite (Cox and Singer, 1986; model 8a)

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

8a

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

Preliminary surface exploration only. Three samples contained 0.7 ppm silver, 0.04 to 0.06 ppm gold, 300 to 1,500 ppm chromium, 70 to 7,000 ppm copper, 100 to 1,000 ppm nickel, and a trace of platinum (Hawley and others, 1969).

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

Hawley and others, 1969; Hawley and Clark, 1974; Kurtak and others, 1988; Balen, 1990 (OFR 34-90).

**Primary reference:** Hawley and others, 1969**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s):** Unnamed (divide between Partin and Little Shotgun creeks)

**Site type:** Occurrence

**ARDF no.:** HE065

**Latitude:** 63.04

**Quadrangle:** HE A-6

**Longitude:** 149.93

**Location description and accuracy:**

This occurrence is at an elevation of about 4,300 feet on the west side of the divide between Little Shotgun Creek and Partin Creek. The map site is in the NW1/4 of sec. 6, T. 22 S., R. 12 W., of the Fairbanks Meridian. The accuracy of the location is within 1 mile. This is location E-37 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Cr

**Other:** Pd, Pt, Ni

**Ore minerals:** Chromite

**Gangue minerals:** Serpentine

**Geologic description:**

The country rocks in the area of this occurrence are a tectonically mixed assemblages of Upper Devonian serpentinite, basalt, chert, and gabbro. The deposit consists of pods of massive chromite in serpentinite. Rock samples from the surface contained low chromium, palladium, and platinum values (Balen, 1990: OFR 34-90). The chromite probably was a magmatic segregation on the ultramafic host rocks.

**Alteration:**

Serpentinization of ultramafic rocks.

**Age of mineralization:**

The chromite probably was a magmatic segregation in Upper Devonian ultramafic intrusive rocks.

**Deposit model:**

Podiform chromite (Cox and Singer, 1986; model 8a)

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

8a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Golden Bell****Site type:** Prospect**ARDF no.:** HE066**Latitude:** 63.04**Quadrangle:** HE A-6**Longitude:** 149.94**Location description and accuracy:**

The Golden Bell placer gold prospect is on upper Partin Creek. The map site is in the NE1/4 of sec. 1, T. 22 S., R. 13 W., of the Fairbanks Meridian. This is location E-38 of Balen (1990: OFR 34-90).

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

The Golden Bell placer gold prospect is on upper Partin Creek. The creek drains Upper Triassic limestone and basalt, Upper Devonian sheared serpentinite, basalt, and chert, and Lower Jurassic and Upper Triassic redbed sandstones (Wilson and others, 1998). These strata are cut by several generations of veins probably related to Upper Cretaceous to Lower Tertiary plutons in the area. It is probable that the placer gold was derived from the erosion of the veins, but the hostrocks of the veins can not be discounted as a gold source.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

The placer was discovered in 1973, but there has been little more than surface exploration since then.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (northeast wall of Eldridge Glacier)

**Site type:** Occurrence

**ARDF no.:** HE067

**Latitude:** 63.01

**Quadrangle:** HE A-6

**Longitude:** 149.99

**Location description and accuracy:**

This occurrence is at an elevation of about 2,400 feet in a stream valley draining the northeast wall of Eldridge Glacier. It is in sec. 14, T. 22 S., R. 13 W., of the Fairbanks Meridian. The location is accurate to within 0.5 mile. This is locality 27 of Cobb (1978: OFR 78-1062).

**Commodities:**

**Main:** Cu

**Other:** Ag, Au, Ni

**Ore minerals:** Chalcopyrite, malachite, pyrite

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this occurrence are a tectonically intermixed assemblage of Upper Devonian serpentinite, basalt, chert, and gabbro. The occurrence consists of massive pyrite and chalcopyrite in irregular and veinlike masses in serpentinite. Some of the chalcopyrite is oxidized to malachite. Rock samples contained 15 ppm silver, 0.1 ppm gold, 50 ppm nickel and 7.5% copper (Hawley and Clark, 1974). The sulfide minerals herein are assumed to be remobilized syngenetic magmatic segregations in the mafic host rocks.

**Alteration:**

**Age of mineralization:**

Probably Late Devonian, remobilized in Late Mesozoic or Tertiary.

**Deposit model:**

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

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

24a



**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

Rock samples contained 15 ppm silver, 0.1 ppm gold, 50 ppm nickel and 7.5% copper (Hawley and Clark, 1974).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Hawley and others, 1969; Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Eldridge; Coal Creek**

**Site type:** Prospect

**ARDF no.:** HE068

**Latitude:** 63.01

**Quadrangle:** HE A-6

**Longitude:** 149.86

**Location description and accuracy:**

This prospect is at an elevation of about 3,700 feet, on the west valley wall of upper Coal Creek. The map site is in the SE1/4 of sec. 16, T. 22 S., R. 12 W., of the Fairbanks Meridian. The location is accurate to within one mile. This is location E39 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Au, Cu, Mn

**Other:** Ni

**Ore minerals:**

**Gangue minerals:**

**Geologic description:**

The country rocks in the vicinity of the Eldridge prospect are Upper Jurassic or Upper Triassic(?) crystal-rich tuff, argillite, chert, graywacke, and limestone (Wilson and others, 1998). The only information about the deposit that it has been made public is that samples of it contain elevated values of gold, manganese, and copper, and minor nickel (Balen, 1990: OFR 34-90).

**Alteration:**

**Age of mineralization:**

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been only surface sampling to date.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Kurtak and others, 1992; Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Shotgun Creek****Site type:** Prospect**ARDF no.:** HE069**Latitude:** 63.05**Quadrangle:** HE A-6**Longitude:** 149.80**Location description and accuracy:**

The map site of this gold placer prospect is at the junction of Shotgun and Little Shotgun creeks, which are east-flowing tributaries of Ohio Creek. The placer workings on Shotgun creek are approximately 4 miles upstream from Ohio Creek. The workings on Little Shotgun Creek extend for about 3 miles above its mouth. The map site is at the south boundary of sec. 35, T. 19 S., R. 10 W., of the Fairbanks Meridian. This is location 26 of Cobb (1978: OFR 78-1062), and location E-36 of Balen (1990: OFR 34-90).

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

Lower Shotgun and Little Shotgun creeks drain Upper Jurassic to Upper Triassic(?) crystal tuff, argillite, chert, graywacke, and limestone. The upper parts of the creeks drain Upper Devonian serpentinite, basalt, chert, and gabbro, in thrust contact with Lower Jurassic and Upper Triassic sandstone and siltstone (Wilson and others, 1998). Capps (1919) reports that placer gold is present, but mining has not been successful.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Inactive

**Workings/exploration:**

There are surface workings only.

**Production notes:**

Capps (1919) reports that placer gold is present, but mining has not been successful.

**Reserves:**

**Additional comments:**

**References:**

Capps, 1919; Cobb, 1973 (B 1374); Hawley and Clark, 1973; Hawley and Clark, 1974; Cobb, 1978 (OFR 78-1062); Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Honolulu Creek; Chulitna Forks****Site type:** Occurrence**ARDF no.:** HE070**Latitude:** 63.06**Quadrangle:** HE A-6**Longitude:** 149.54**Location description and accuracy:**

The map site of this placer gold occurrence is on the northwest bank of Honolulu Creek, just downstream from the George Parks Highway. It is in the SW1/4 of sec. 30, T. 21 S., R. 10 W., of the Fairbanks Meridian. The placer apparently extends downstream from the east boundary of sec. 30, to the mouth of Honolulu Creek. This site corresponds to loc. D-24 in Balen (1990: OFR 34-90). Also see Additional comments.

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

Honolulu Creek drains an area underlain by Tertiary (Eocene?) intrusive rocks and Lower Cretaceous or Upper Jurassic turbidite (Wilson and others, 1998). The placer gold in Honolulu Creek may have been derived from the erosion of lode deposits like those at HE131 and HE133.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There are surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

MAS File number 0020670132 erroneously places this occurrence in T. 22 S.

**References:**

Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Little Honolulu Creek; Brush Battle****Site type:** Occurrences**ARDF no.:** HE071**Latitude:** 63.03**Quadrangle:** HE A-6**Longitude:** 149.53**Location description and accuracy:**

Several placer gold occurrences are distributed along about 2 miles of Little Honolulu Creek. The map site is at about the midpoint of the occurrences, in the SE1/4 of sec. 8, T. 22 S., R. 10 W., of the Fairbanks Meridian. This is location D-23 of Balen (1990: OFR 34-90).

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

Little Honolulu Creek drains an area underlain by Tertiary (Eocene?) granodiorite and granite intruding Lower Cretaceous and Upper Jurassic metamorphosed turbidites (Wilson and others, 1998). The placer gold was probably derived from the erosion of lode deposits such as those at HE131 and HE133.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None



**Site Status:** Inactive

**Workings/exploration:**

There are only surface workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Snoopy; Costello Creek****Site type:** Occurrence**ARDF no.:** HE072**Latitude:** 63.26**Quadrangle:** HE B-5**Longitude:** 149.47**Location description and accuracy:**

The Snoopy occurrence, often linked to the nearby Nim claim block (HE074), covers a 0.25 by 0.75 mile area. The map site is at the center of the area, in sec. 21, T. 19 S., R. 10 W., of the Fairbanks Meridian. Useful published maps showing the general location of the Snoopy prospect are: Hawley and Clark (1974); Hawley and others (1978); Bundtzen (1983); and Salisbury and Dietz (1984).

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

Thick Quaternary glacial deposits cover much of the bedrock at the Snoopy prospect. The country rocks in the area are Upper Triassic to Upper Jurassic crystal tuff, argillite, chert, graywacke, and limestone. These strata are intruded by garnetiferous diorite porphyry, which in turn is cut by monzonite porphyry and quartz porphyry. The intrusive rocks are correlated with similar hypabyssal plutons at the Golden Zone mine (HE043), which have been dated as Late Cretaceous (Swainbank and others, 1977). The deposit is poorly exposed. It may be a breccia pipe or a porphyry deposit that contains as much as 3% disseminated sulfides (Hawley and Clark, 1974).

The sulfide minerals are arsenopyrite, chalcopyrite, galena, pyrite, pyrrhotite, and sphalerite. Selected samples contain 0.5 to 0.7 ppm gold, 200 to more than 10,000 ppm silver, and 150 to 1,000 ppm copper (Hawley and Clark, 1974). The Snoopy deposit probably is an extension of the deposit at the adjacent Nim prospect (HE074), where geophysical methods indicate 5 breccia-pipes in addition to disseminated porphyry-style mineralization. The same geophysical surveys suggest that the Snoopy area may contain 2 more pipes (Bundtzen, 1983, fig. 5).

**Alteration:**

Alteration consists of widespread propylitic alteration and silicification. Local zones of potassic alteration (secondary biotite) have been reported.

**Age of mineralization:**

Late Cretaceous (70-65 Ma) or younger.

**Deposit model:**

Polymetallic vein and Au-Ag breccia pipe or Cu-Au porphyry (Cox and Singer, 1986; models 22c, 20c)

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

22c, 20c

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Surface workings including trenching and drilling. Intensive exploration in the late 1970s included 18 shallow reverse-circulation drill holes in the Snoopy and Nim prospect areas. Geophysical surveys including IP and magnetics were conducted on the property (Bundtzen, 1983).

Selected samples contain 0.5 to 0.7 ppm gold, 200 to more than 10,000 ppm silver, and 150 to 1,000 ppm copper (Hawley and Clark, 1974).

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

Hawley and others, 1969; Hawley and Clark, 1974; Hawley and others, 1978; Salisbury and Dietz, 1984; Bundtzen, 1983; Bundtzen and others, 1984; Balen, 1990 (OFR 34-90); Kurtak and others, 1992.

**Primary reference:** Bundtzen, 1983

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

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

**Site type:** Occurrence

**ARDF no.:** HE073

**Latitude:** 63.26

**Quadrangle:** HE B-5

**Longitude:** 149.28

**Location description and accuracy:**

This placer gold occurrence is on Squaw Creek, a tributary of the Middle Fork Chulitna River. The map site is just south of the center of sec. 16, T. 19 S., R. 9 W., of the Fairbanks Meridian. Placer activity has occurred from about the map site, downstream for about a mile. This is location E-13 of Balen (1990: OFR 34-90). The location is accurate to within 0.5 mile.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Squaw Creek drains an area of unconsolidated Quaternary fluvial and glacial deposits. The source of the placer gold is unknown.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Nim

**Site type:** Prospect

**ARDF no.:** HE074

**Latitude:** 63.28

**Quadrangle:** HE B-5

**Longitude:** 149.43

**Location description and accuracy:**

The Nim claim block at its acme, comprised 168 claims. The block was approximately rectangular, with the long axis oriented NE - SW. The center of the prospect area is at the intersection of secs. 10, 11, 14, and 15, T. 19 S., R. 10 W., of the Fairbanks Meridian. The location is accurate to within 0.5 mile.

**Commodities:**

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

**Other:** Pb, Zn

**Ore minerals:** Arsenopyrite, bornite, chalcocite, chalcopyrite, galena, molybdenite, pyrite, sphalerite

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of the Him prospect include Upper Triassic to Upper Jurassic crystal tuff, argillite, chert, graywacke, and limestone, which are intruded successively by hypabyssal garnetiferous diorite porphyry, and by monzonite porphyry and quartz porphyry. The intrusive rocks are correlated with similar Upper Cretaceous plutons at the Golden Zone mine (HE043) (Swainbank and others, 1977). The deposits consists chiefly of pluton-hosted, porphyry-type disseminations of arsenopyrite, bornite, chalcocite, chalcopyrite, and molybdenite in a 4,000- by 4,000-foot area. Selected bedrock samples assay as high as 5% copper, 360 ppm molybdenite, 2 ppm gold and 9 ounces of silver per ton.

In addition to the porphyry-type deposit. mapping and geophysical methods indicate 5 breccia-pipe anomalies similar to those at the Golden Zone mine (Bundtzen and others, 1984). The Nim deposit has a slightly different geochemical signature from the Golden Zone mine (Nim is higher in molybdenum-copper, lower in gold), but its hybrid breccia-porphyry mineralization, small alteration haloes, and complex mineralogy are essentially the same as at the Golden Zone mine.

**Alteration:**

Alteration consists of widespread propylitic alteration and silicification. Local zones of potassic alteration marked by secondary biotite reported.

**Age of mineralization:**

The similarity of the Nim deposit to the Upper Cretaceous (70-65 Ma) Golden Zone mine (HE043) suggests that they are probably the same age.

**Deposit model:**

Polymetallic vein, Au-Ag breccia pipe, or Cu-Au porphyry (Cox and Singer, 1986; models 22c, 20c)

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

22c, 20c

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Exploration in the late 1970's consisted of at least 18 shallow RC drill holes into the Snoopy and Nim areas. IP and magnetic surveys have also been conducted on the property (Bundtzen, 1983).

Selected bedrock samples assay as high as 5% copper, 360 ppm molybdenite, 2 ppm gold and 9 ounces of silver per ton.

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

Capps, 1919; Capps, 1924; Ross, 1933; Hawley and others, 1969; Clark and Cobb, 1972; Hawley and Clark, 1974; Hawley and others, 1978; Salisbury and Dietz, 1984; Bundtzen, 1983; Bundtzen and others, 1984; Balen, 1990 (OFR 34-90); Kurtak and others, 1992.

**Primary reference:** Salisbury and Dietz, 1984

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

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

**Site type:** Prospect

**ARDF no.:** HE075

**Latitude:** 63.285

**Quadrangle:** HE B-5

**Longitude:** 149.481

**Location description and accuracy:**

This site is at an elevation of about 2,900 feet on the south bank of Camp Creek. It is in the NW1/4 sec. 9, T. 19 S., R. 10 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet.

**Commodities:**

**Main:** Ag, Au

**Other:** As, Cu, Sb, Zn

**Ore minerals:** Arsenopyrite, chalcopyrite, pyrite, sphalerite, stibnite

**Gangue minerals:** Quartz

**Geologic description:**

The country rock at this prospect consists of Upper Jurassic to Upper Triassic(?) crystal tuff, argillite, chert, graywacke, and limestone that are intruded by Upper Cretaceous quartz diorite dikes. The deposit is in brecciated dikes and consists of lenses 1 to 2 meters thick, and up to 10 meters long, of massive chalcopyrite, arsenopyrite, stibnite, pyrite, and sphalerite. The deposit is similar in mineralogy and type to the Golden Zone deposit (HE043) and satellite prospects to the southwest. Samples from arsenopyrite-rich veins contained a maximum 9.3 ppm Au and 22 ppm Ag over a width of 2.0 feet (Hawley and others, 1978).

**Alteration:**

Phyllic.

**Age of mineralization:**

The similarity of the Nimbus deposit to the Upper Cretaceous (70-65 Ma) Golden Zone deposit (HE043) suggests that they are probably the same age.

**Deposit model:**

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



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

22c

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

There has been surface exploration. Samples from arsenopyrite-rich veins contained a maximum 9.3 ppm Au and 22 ppm Ag over a width of 2.0 feet (Hawley and others, 1978).

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

Some references combine this prospect with the similar Nimrod prospect (HE076) as one site.

**References:**

Hawley and others, 1969; Hawley and others, 1978; Bundtzen, 1983; Nokleberg and others, 1994.

**Primary reference:** Hawley and others, 1978**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

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

**Site type:** Prospect

**ARDF no.:** HE076

**Latitude:** 63.292

**Quadrangle:** HE B-5

**Longitude:** 149.499

**Location description and accuracy:**

The Nimrod prospect is at an elevation of about 3,100 feet on the north side of Camp Creek, about 1.4 miles northeast of the Dunkle mine camp. The site is located in NE 1/4 sec. 8, T. 19 S., R. 10 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet.

**Commodities:**

**Main:** Ag, Au

**Other:** As, Cu, Sb, Zn

**Ore minerals:** Arsenopyrite, chalcopyrite, pyrite, sphalerite, stibnite

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of the Nimrod prospect are Devonian ophiolite and Upper Devonian to Triassic tuffaceous chert, volcanic conglomerate, volcanic mudstone, basaltic breccia, graywacke, and limestone (Wilson and others, 1998). The Nimrod prospect consists of sulfide-bearing, quartz-matrix breccia poorly exposed for 200 to 300 feet along a strand of the Chulitna fault. The sulfide minerals are arsenopyrite, chalcopyrite, pyrite, sphalerite, and stibnite. Samples contain up to 3 ounces of silver per ton, in addition to lead, zinc, antimony, and gold (Hawley and others, 1978). The deposit is similar in mineralogy and structure to the Golden Zone and satellite deposits (HE043, HE040, etc.).

**Alteration:**

Phyllic?

**Age of mineralization:**

Probably Late Cretaceous, assuming that the deposit is contemporaneous with the Golden Zone and satellite deposits (HE043, HE040, etc.).

**Deposit model:**

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

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

22c

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

There are minor surface workings. Samples contain up to 3 ounces of silver per ton, in addition to lead, zinc, antimony, and gold (Hawley and others, 1978).

**Production notes:**

**Reserves:**

**Additional comments:**

Similar to the Nimbus prospect (HE075); some references combine the two as one site.

**References:**

Hawley and others, 1969; Hawley and others, 1978; Bundtzen, 1983; Wilson and others, 1998.

**Primary reference:** Hawley and others, 1978

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south of upper Windy Creek)

**Site type:** Occurrence

**ARDF no.:** HE077

**Latitude:** 63.46

**Quadrangle:** HE B-5

**Longitude:** 149.14

**Location description and accuracy:**

This occurrence is at an elevation of about 4,200 feet south of upper Windy Creek, a tributary of the Nenana River. The site is at the junction of sections 5, 6, 7 and 8, T. 17 S., R. 8 W., of the Fairbanks Meridian. The location is accurate to within 3,000 feet. This is location 1 of Hickman and Craddock (1976).

**Commodities:**

**Main:** Cu

**Other:** Ag

**Ore minerals:** Chalcopyrite, malachite, pyrrhotite

**Gangue minerals:** Calcite, diopside, wollastonite

**Geologic description:**

The country rocks in the area of this occurrence are Devonian to Ordovician argillite and interbedded limestone that have been intruded by small plugs of Upper Cretaceous to Lower Tertiary quartz diorite. The deposit consists of a 3- to 9-foot-wide skarn containing discontinuous, 1- to 3-foot-thick zones of pyrrhotite and minor chalcopyrite along fractures. Weathering and oxidation have produced a heavy limonitic coating, malachite, and erythrite. Samples contain 1,900 ppm copper and 0.6 ppm silver (Hickman and Craddock, 1976).

**Alteration:**

Skarn and subsequent weathering and oxidation.

**Age of mineralization:**

Late Cretaceous or younger.

**Deposit model:**

Cu skarn (Cox and Singer, 1986; model 18b)

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

18b

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface sampling only. Samples contain 1,900 ppm copper and 0.6 ppm silver (Hickman and Craddock, 1976).

**Production notes:**

**Reserves:**

**Additional comments:**

The site is in Denali National Park Wilderness.

**References:**

Hickman and Craddock, 1976; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Hickman and Craddock, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south of Windy Creek)

**Site type:** Occurrence

**ARDF no.:** HE078

**Latitude:** 63.46

**Quadrangle:** HE B-5

**Longitude:** 149.12

**Location description and accuracy:**

This occurrence is at an elevation of about 3,900 feet, about 0.6 mile southwest of Windy Creek changes from east to southeast. The site is at the NE corner of sec. 8, T. 17 S., R. 8 W., of the Fairbanks Meridian. The location is accurate to within 3000 feet. This is location 2 of Hickman and Craddock (1976).

**Commodities:**

**Main:** Cu

**Other:** Ag

**Ore minerals:** Chalcopyrite, malachite

**Gangue minerals:** Calcite, diopside, wollastonite

**Geologic description:**

The country rocks in the area of this occurrence are Devonian to Ordovician interbedded argillite and limestone, intruded by small plugs of Upper Cretaceous to Lower Tertiary quartz diorite. The occurrence consists of chalcopyrite-bearing skarn zones adjacent to the stocks. Weathering zones has produced limonite gossan and malachite. Samples contain 1,900 ppm copper and 0.6 ppm silver (Hickman and Craddock, 1976).

**Alteration:**

Weathering of skarn to produce secondary iron and copper minerals.

**Age of mineralization:**

Probably Late Cretaceous or younger.

**Deposit model:**

Cu skarn (Cox and Singer, 1986; model 18b)

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

18b

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface sampling only. Samples contain 1,900 ppm copper and 0.6 ppm silver (Hickman and Craddock, 1976).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Hickman and Craddock, 1976.

**Primary reference:** Hickman and Craddock, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Windy Creek****Site type:** Occurrence**ARDF no.:** HE079**Latitude:** 63.46**Quadrangle:** HE B-5**Longitude:** 149.06**Location description and accuracy:**

This occurrence is at an elevation of about 3,500 feet northeast of Windy Creek. The map site is about 1.5 miles north of the confluence of Windy Creek and West Fork Windy Creek, in the south-central part of sec. 3, T. 17 S., R. 8 W., of the Fairbanks Meridian. The location is accurate to within 3,000 feet. This is location 3 of Hickman and Craddock (1976).

**Commodities:****Main:** Sb, Zn**Other:****Ore minerals:** Arsenopyrite?, pyrite, sphalerite, stibnite**Gangue minerals:****Geologic description:**

This occurrence is in Pennsylvanian to Upper Triassic graywacke and argillite, and consists of a few small veinlets (up to 1-inch wide) of sphalerite, stibnite, and pyrite. Pyrite also is disseminated in the wallrock adjacent to the veins. The deposit has a strike length of at least 150 feet. Samples contain 8,800 ppm lead, 2,200 ppm zinc, 14.9 ppm silver, 2,000 ppm antimony, and traces of arsenic (Hickman and Craddock, 1976).

**Alteration:**

Host rocks are pyritized and silicified adjacent to the veins.

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

Simple Sb (Cox and Singer, 1986; model 27d)

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

27d



**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface sampling only. Samples contain 8,800 ppm lead, 2,200 ppm zinc, 14.9 ppm silver, 2,000 ppm antimony, and traces of arsenic (Hickman and Craddock, 1976).

**Production notes:**

**Reserves:**

**Additional comments:**

The site is in Denali National Park Wilderness.

**References:**

Hickman and Craddock, 1976.

**Primary reference:** Hickman and Craddock, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (east of lower Slime Creek)

**Site type:** Occurrence

**ARDF no.:** HE080

**Latitude:** 63.508

**Quadrangle:** HE C-4

**Longitude:** 148.789

**Location description and accuracy:**

This occurrence is at an elevation of about 3,100 feet, about 0.7 mile east of the point at which the Parks Highway crosses Slime Creek. The site is in the SW1/4 of sec. 19, T. 16 S., R. 6 W., of the Fairbanks Meridian. The location is accurate to within 2000 feet. This is location 5 of Hickman and Craddock (1976).

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Bornite, digenite

**Gangue minerals:**

**Geologic description:**

Up to 1% bornite and digenite are disseminated in Triassic metabasalt (Hickman and Craddock, 1976).

**Alteration:**

**Age of mineralization:**

The sulfides are probably indigenous to the Triassic hostrock.

**Deposit model:**

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

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

24a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Hickman and Craddock, 1976; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Hickman and Craddock, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Yanert River****Site type:** Prospect**ARDF no.:** HE081**Latitude:** 63.67**Quadrangle:** HE C-4**Longitude:** 148.69**Location description and accuracy:**

This placer gold prospect is on the lower reaches of the Yanert River, about 2.5 miles above its junction with the Nenana River. The map site is near the presumed midpoint of the placer, in the NE1/4 of sec. 27, T. 14 S., R. 6 W., of the Fairbanks Meridian.

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

The source of the placer gold in this prospect is unknown. No other information about the prospect has been made public.

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

Quaternary.

**Deposit model:**

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

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

39a

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

Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (upper Moody Creek)

**Site type:** Prospect

**ARDF no.:** HE082

**Latitude:** 63.78

**Quadrangle:** HE D-3

**Longitude:** 148.49

**Location description and accuracy:**

This placer gold prospect is on Moody Creek, a tributary of the Nenana River. The map site is in the NW1/4 of sec. 22, T. 13 S., R. 5 W., of the Fairbanks Meridian.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Moody Creek drains an area underlain by Paleozoic to Upper Precambrian metasedimentary and metavolcanic rocks cut by Mesozoic intrusive rocks. No other information about this placer gold prospect has been made public.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (north side of Cody Creek)

**Site type:** Occurrence

**ARDF no.:** HE083

**Latitude:** 63.84

**Quadrangle:** HE D-3

**Longitude:** 148.11

**Location description and accuracy:**

This occurrence is at an elevation of about 3,700 feet on the north wall of the valley of Cody Creek, about 3.8 miles upstream from its junction with Wood River. The map site is in the NE1/4 of sec. 34, T. 12 S., R. 3 W., of the Fairbanks Meridian. The location is accurate to within 0.5 mile.

**Commodities:**

**Main:** Sb

**Other:** Au

**Ore minerals:** Stibnite

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of this occurrence are Lower Paleozoic or possibly Upper Precambrian schists, cut by Upper Cretaceous stocks and Tertiary sills and dikes. Limited information about this deposit suggests that it consists of one or more stibnite-quartz veins. Such a deposit would be of interest chiefly for its gold context.

**Alteration:**

**Age of mineralization:**

Probably Late Cretaceous or younger.

**Deposit model:**

Simple Sb (Cox and Singer, 1986; model 27d)

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

27d

**Production Status:** None



**Site Status:** Probably inactive

**Workings/exploration:**

There has been surface exploration only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Smith, 1939; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Needle Rock****Site type:** Prospect**ARDF no.:** HE084**Latitude:** 63.98**Quadrangle:** HE D-3**Longitude:** 148.45**Location description and accuracy:**

This gold placer prospect adjoins the upper Totatlanika River near Needle Rock, a prominent landmark. The map site is in the SW1/4 of sec. 1, T. 11 S., R. 5 W., of the Fairbanks Meridian.

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

The country rocks in the area of the Needle Rock gold placer prospect include the mid-Paleocene Totatlanika Schist, mid-Tertiary hypabyssal plutons, and younger Tertiary strata that overlie the basement rocks (Wahrhaftig, 1970: GQ805). At Needle Rock, Tertiary gravels have been worked for placer gold.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.**Site Status:** Probably inactive

**Workings/exploration:**

Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Maddren, 1918; Wahrhaftig, 1970 (GQ 805); Cobb, 1978 (OFR 78-1062).

**Primary reference:** Maddren, 1918

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): McCuen Gulch****Site type:** Mine**ARDF no.:** HE085**Latitude:** 63.98**Quadrangle:** HE D-3**Longitude:** 148.44**Location description and accuracy:**

The McCuen Gulch placer gold prospect is on a south-flowing tributary to Totatlanika River, approximately 0.5 miles upstream from Needle Rock. The map site is near the mouth of the gulch, in sec. 12, T. 11 S., R. 5 W., of the Fairbanks Meridian. This is locality 58 of Clark and Cobb (1972).

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

McCuen Gulch drains an area of mid-Tertiary coal-bearing strata that overlie mid-Paleozoic Totatlanika Schist, composed predominantly of felsic and mafic metavolcanic and metavolcaniclastic rocks (Wilson and others, 1998). The schist is intruded by Tertiary hypabyssal plutons.

The placer deposit is in poorly-sorted alluvium consisting of well-rounded clasts, mainly of coarse-grained schist. According to Maddren (1918), the gold is derived from bedrock schist rather than reconcentrated from the Tertiary gravels (Maddren, 1918).

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Surface development, all prior to 1918.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Maddren, 1918; Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062); Wilson and others, 1998.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Dexter Creek****Site type:** Prospect**ARDF no.:** HE086**Latitude:** 63.96**Quadrangle:** HE D-3**Longitude:** 148.34**Location description and accuracy:**

This placer gold prospect is on Dexter Creek, a tributary of the Totatlanika River. The map site is near the center of sec. 16, T. 11 S., R. 4 W., of the Fairbanks Meridian.

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

Dexter Creek drains an area underlain by Paleozoic to Upper Precambrian metasedimentary and metavolcanic rocks cut by Mesozoic intrusive rocks. The source of the placer gold in Dexter Creek is presumed to be as-yet undiscovered gold-bearing lodes in its drainage area.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None**Site Status:** Probably inactive

**Workings/exploration:**

There are only surface workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Surprise Creek****Site type:** Occurrence**ARDF no.:** HE087**Latitude:** 63.93**Quadrangle:** HE D-3**Longitude:** 148.32**Location description and accuracy:**

This occurrence is at an elevation of about 4,100 feet on Dexter Creek, a tributary of the Totatlanika River. The map site is in the SW1/4 of sec. 27, T. 11 S., R. 4 W., of the Fairbanks Meridian. The location is accurate to within 1 mile.

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

The country rocks in the general area of this occurrence are Lower Paleozoic or possibly Upper Precambrian schists and younger Paleozoic Keevy Peak Formation. The deposit is in schist, and consists of stratiform layers of massive galena and sphalerite, accompanied by quartz.

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

Mineralization is syngenetic with the Lower Paleozoic or possibly Upper Precambrian hostrocks.

**Deposit model:**

Kuroko massive sulfide(?) (Cox and Singer, 1986; model 28a)

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

28a?

**Production Status:** None



**Site Status:** Probably inactive

**Workings/exploration:**

There has been only surface exploration to date.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Sheep Creek; Gossan Peak****Site type:** Prospect**ARDF no.:** HE088**Latitude:** 63.92**Quadrangle:** HE D-3**Longitude:** 148.28**Location description and accuracy:**

This prospect is at an elevation of about 700 feet near the head of Sheep Creek. It is in the NW1/4 of sec. 35, T. 11 S., R. 4 W., of the Fairbanks Meridian. The location is accurate to within 1 mile. This is locality 4 of Cox and others (1989).

**Commodities:****Main:** Pb, Zn**Other:** Ag, Sn**Ore minerals:** Cassiterite?, galena, pyrite, sphalerite, stannite?**Gangue minerals:** Quartz, sericite**Geologic description:**

The Sheep Creek deposit is in the Totatlanika Schist near its contact with the Keevy Peak Formation (Nokleberg and others, 1994). The Totatlanika Schist ranges in age from Early Mississippian to Middle Devonian and consists mostly of felsic and mafic metavolcanic and metavolcaniclastic rocks (Wilson and others, 1998). The deposit is 200 feet thick and 2,000 feet long, and consists of isoclinally folded, stratabound lenses of massive sulfides in tuffaceous chlorite schist and chert (O'Connor and others, 1989). The sulfides are fine-grained sphalerite, galena, and pyrite. This deposit has high values of Sn, reported as either cassiterite or stannite. Channel sampling and grab samples contain up to 11% combined lead and zinc, and 10 grams of silver per ton. Zones up to 1 meter wide contain 1% tin (Nokleberg and others, 1994).

**Alteration:**

Alteration consists of sericitized schist in both the hanging and footwall of the deposit.

**Age of mineralization:**

Mineralization is syngenetic with the Paleozoic host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

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

At least three drill holes to a maximum depth of 470 feet were completed in the 1970's (O'Connor and others, 1989). Channel sampling and grab samples contain up to 11% combined lead and zinc, and 10 grams of silver per ton. Zones up to 1 meter wide contain 1% tin (Nokleberg and others, 1994).

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

Based on limited data a tentative resource of 5.5 million pounds of tin has been identified (O'Connor and others, 1989). There are no estimates of base metal reserves.

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

Wahrhaftig, 1970 (GQ 805); Bundtzen and others, 1984; Nokleberg and others, 1987; Cox and others, 1989; O'Connor and others, 1989; Nokleberg and others, 1994; Wilson and others, 1998.

**Primary reference:** O'Connor and others, 1989**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

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

**Site type:** Mine

**ARDF no.:** HE089

**Latitude:** 63.99

**Quadrangle:** HE D-3

**Longitude:** 148.20

**Location description and accuracy:**

This placer gold mine is on Moose Creek, a tributary of Tatlanika Creek. The map site is about a mile below the junction of Last Chance Creek, at the SE corner of sec. 31, T. 10 S., R. 6 W., of the Fairbanks Meridian. This is locality 59 of Clark and Cobb (1972).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Moose Creek drains an area underlain by Lower Mississippian to Middle Devonian Tatlanika Schist, older Paleozoic to Late Precambrian schists, and Mesozoic and Tertiary intrusive rocks. No other information about this placer gold mine has been made public.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Active?

**Workings/exploration:**

There were surface workings only at Moose Creek.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Smith, 1933 (B 836); Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (upper Moose Creek)

**Site type:** Occurrence

**ARDF no.:** HE090

**Latitude:** 63.98

**Quadrangle:** HE D-3

**Longitude:** 148.09

**Location description and accuracy:**

This occurrence is at an elevation of about 3,400 feet, on the northeast wall of the valley of Moose Creek, about 2 miles upstream from its junction with Last Chance Creek. The map site is in the NE1/4 of sec. 11, T. 11 S., R. 3 W., of the Fairbanks Meridian. The location is accurate to within 1 mile.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:**

**Gangue minerals:**

**Geologic description:**

The country rocks in the general area of this occurrence are thrust slices of Lower Mississippian to Middle Devonian Totatlanika Schist (Wilson and others, 1998), small, Tertiary hypabyssal intrusions (Wahrhaftig, 1970: GQ805). The occurrence reportedly is a gold lode.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

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

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

There has only been surface exploration.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Wilson and others, 1998; Wahrhaftig, 1970 (GQ 805).

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Last Chance Creek****Site type:** Prospect**ARDF no.:** HE091**Latitude:** 63.93**Quadrangle:** HE D-3**Longitude:** 148.14**Location description and accuracy:**

This placer gold prospect is on Last Chance Creek, a tributary of Moose Creek. The map site is in the E1/2 of sec. 28, T. 11 S., R. 3 W., of the Fairbanks Meridian.

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

Last Chance Creek drains an area underlain by the mid-Paleozoic Totatlanika Schist, by Lower Paleozoic to Upper Precambrian schists, and by Mesozoic and Tertiary intrusive rocks. No other information about this placer gold prospect has been made public.

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

Quaternary.

**Deposit model:**

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

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

39a

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



Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Cobb, 1973 (B 1374); Cox and others, 1989.

**Primary reference:** Cobb, 1973 (B 1374)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Kenny

**Site type:** Occurrence

**ARDF no.:** HE092

**Latitude:** 63.93

**Quadrangle:** HE D-3

**Longitude:** 148.01

**Location description and accuracy:**

This occurrence is at an elevation of about 6,100 feet, about 1 mile north-northeast of Keevy Peak. The map site is at the center of sec. 30, T. 11 S., R. 2 W., of the Fairbanks Meridian. The location is accurate to within 1 mile.

**Commodities:**

**Main:** Pb, Zn

**Other:** Ag

**Ore minerals:** Galena, sphalerite

**Gangue minerals:** Quartz, sericite

**Geologic description:**

The general area of the Peaches prospect is underlain by Lower Paleozoic or possibly Upper Precambrian schists cut by Late Cretaceous stocks and Tertiary sills and dikes. The deposit is in schist, and consists of stratiform layers of massive sulfides, chiefly galena and sphalerite, accompanied by quartz and sericite (Inmet Mining, oral communication, 1999).

**Alteration:**

**Age of mineralization:**

Mineralization probably is syngenetic with the Lower Paleozoic or Upper Precambrian host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

There has been only surface exploration to date.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Keevy Peak****Site type:** Occurrence**ARDF no.:** HE093**Latitude:** 63.92**Quadrangle:** HE D-3**Longitude:** 148.01**Location description and accuracy:**

This occurrence is at an elevation of about 6,000 feet, about 0.7 miles southeast of Keevy Peak. The map site is in the SE1/4 of sec. 31, T. 11 S., R. 2 W., of the Fairbanks Meridian. The location is accurate to within 1 mile.

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

The general area of the Peaches prospect is underlain by Lower Paleozoic or possibly Upper Precambrian schists cut by Late Cretaceous stocks and Tertiary sills and dikes. The deposit is in schist, and consists of stratiform layers of massive sulfides, chiefly galena and sphalerite, accompanied by quartz and sericite (Inmet Mining, oral communication, 1999).

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

Mineralization probably is syngenetic with the Lower Paleozoic or Upper Precambrian host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

There has only been surface exploration to date.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record.

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Peaches****Site type:** Prospect**ARDF no.:** HE094**Latitude:** 63.89**Quadrangle:** HE D-3**Longitude:** 148.02**Location description and accuracy:**

The Peaches prospect is at an elevation of about 4,600 feet on the south wall of the valley of upper Copper Creek. The map site is about 2 miles south-southeast of Keevy Peak, in the NE1/4 of sec. 7, T. 12 S., R. 2 W., of the Fairbanks Meridian. The location is accurate to within 0.5 mile.

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

The general area of the Peaches prospect is underlain by Lower Paleozoic or possibly Upper Precambrian schists cut by Late Cretaceous stocks and Tertiary sills and dikes. The deposit is in schist, and consists of stratiform layers of massive sulfides, chiefly galena and sphalerite, accompanied by quartz and sericite (Inmet Mining, oral communication, 1999).

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

Mineralization probably is syngenetic with the Lower Paleozoic or Upper Precambrian host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been surface exploration only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

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

**Site type:** Prospect

**ARDF no.:** HE095

**Latitude:** 63.75

**Quadrangle:** HE C-3

**Longitude:** 148.04

**Location description and accuracy:**

This placer gold prospect is on Grizzly Creek, a tributary of the Wood River. The map site is in the NW1/4 of sec. 36, T. 13 S., R. 3 W., of the Fairbanks Meridian.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Bedrock in the area of the Grizzly Creek placer prospect consists of Cantwell Formation, and of Upper Triassic calcareous sedimentary rocks intruded by gabbro plugs and sills (Wilson and others, 1998).

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Probably inactive

**Workings/exploration:**



There are surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Smith, 1938; Cobb, 1978 (OFR 78-1062); Wilson and others, 1998.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Unnamed (west of Anderson Mountain)****Site type:** Prospect**ARDF no.:** HE096**Latitude:** 63.80**Quadrangle:** HE D-2**Longitude:** 147.95**Location description and accuracy:**

The prospect is located about 0.5 mile west of the summit of Anderson Mountain at an elevation of 4,500 to 5,500 feet. It is in sec. 9, T. 13 S., R. 2 W., of the Fairbanks Meridian. The location is accurate to within one mile. This is locality 12 of Cox and others (1989).

**Commodities:****Main:** Ag, Cu, Pb, Zn**Other:****Ore minerals:** Arsenopyrite, chalcopyrite, enargite, galena, sphalerite**Gangue minerals:** Barite, calcite, chlorite, quartz, sericite, siderite**Geologic description:**

The prospect is in the Upper Devonian(?) felsic metavolcanic schist and phyllite, often containing relict phenocrysts of quartz, orthoclase, and plagioclase (Wilson and others, 1998). The deposit consists of massive layers of chalcopyrite, galena, sphalerite, enargite, and arsenopyrite in gangue of quartz, sericite, chlorite, calcite, barite, and siderite. The sulfide beds appear to lie on an irregular paleosurface on the footwall, with domal sulfide accumulations at the tops of layers (Nokleberg and others, 1994). The Hines Creek fault, a major structure that is responsible for much structural complexity at Anderson Mountain, is two miles south of the prospect. Numerous high-angle faults displace the sulfide layers, and folding makes tracing the layers a challenge. The discovery drill hole in 1976 intersected a massive sulfide zone that measured 1.7 meters thick and assayed 1.2% copper, 2% lead, 8.5% zinc and 61.4 grams of silver per ton (Schuster, 1998). Surface grab samples reportedly contain 14% combined lead and zinc, 2.5% copper and 274 grams of silver per ton. Nokleberg and others (1994) report copper grades varying from 0.5 to 19%, lead grades up to 5%, up to 22% zinc and up to 170 grams of silver per ton.

**Alteration:**

Absence of footwall alteration and stringer mineralization suggests off-vent deposition.

**Age of mineralization:**

Mineralization was probably syngenetic with the Upper Devonian(?) host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

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

Geophysical and geochemical surveys have defined a potential zone of volcanogenic massive sulfide mineralization stretching over a strike length of 1373 meters. There has been about 2500 meters of drilling at the prospect (Robertson, 1998). The discovery drill hole in 1976 intersected a massive sulfide zone that measured 1.7 meters thick and assayed 1.2% copper, 2% lead, 8.5% zinc and 61.4 grams of silver per ton (Schuster, 1998). Surface grab samples reportedly contain 14% combined lead and zinc, 2.5% copper and 274 grams of silver per ton. Nokleberg and others (1994) report copper grades varying from 0.5 to 19%, lead grades up to 5%, up to 22% zinc and up to 170 grams of silver per ton.

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

High geochemical values of arsenic, antimony, mercury, and tungsten may be derived from older schist basement. Anderson Mountain is significantly different from prospects in the Totatlanika Schist belt to the north (e.g. HE122) in having higher Cu content.

**References:**

Nokleberg and others, 1987; Cox and others, 1989; Nokleberg and others, 1994; Robertson, 1998; Schuster, 1998; Wilson and others, 1998.

**Primary reference:** Nokleberg and others, 1994**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s):** Unnamed (headwaters of Virginia Creek)

**Site type:** Prospect

**ARDF no.:** HE097

**Latitude:** 63.828

**Quadrangle:** HE D-2

**Longitude:** 147.788

**Location description and accuracy:**

This prospect is at an elevation of about 4,000 feet in the headwaters of Virginia Creek, a tributary of the Wood River. The site is in sec. 32, T.12 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within one-quarter mile.

**Commodities:**

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

**Other:**

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

**Gangue minerals:** Quartz, sericite

**Geologic description:**

This deposit is a steeply-dipping stratabound massive sulfide horizon up to 13.1 feet thick in pelite and quartzite of the lower Paleozoic to possibly Upper Precambrian Birch Creek Schist (Wilson and others, 1998). The metasediments are cut by a lower Tertiary to Cretaceous intrusive stock on the southeastern boundary of the prospect area. The sulfide minerals are chalcopyrite, galena, pyrrhotite, and sphalerite. At least six drill holes have tested the deposit. Samples contain up to 0.53% copper, 1.89% lead, 6.51% zinc, 185.1 grams of silver per ton and 0.38 grams of gold per ton (www.grayd.com, 1999).

**Alteration:**

**Age of mineralization:**

Mineralization was probably syngenetic with host rocks that are early Paleozoic to possibly Late Precambrian.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Geophysical and geochemical surveys have outlined the sulfide zone. At least six holes have been drilled at the prospect. Samples contain up to 0.53% copper, 1.89% lead, 6.51% zinc, 185.1 grams of silver per ton and 0.38 grams of gold per ton (www.grayd.com, 1999).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Bundtzen and others, 1984; Eakins and others, 1985; Wilson and others, 1998.

**Primary reference:** www.grayd.com, 1999

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (on Kansas Creek)

**Site type:** Prospect

**ARDF no.:** HE098

**Latitude:** 63.87

**Quadrangle:** HE D-2

**Longitude:** 147.79

**Location description and accuracy:**

This prospect is at an elevation of about 2,700 feet on the northeast bank of Kansas Creek, approximately 2 miles upstream from its junction with Wood River. It is in sec. 17, T. 12 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 1.5 miles. This is location 3 of Clark and Cobb (1972).

**Commodities:**

**Main:** Sb

**Other:** Pb, Zn

**Ore minerals:** Stibnite

**Gangue minerals:** Quartz

**Geologic description:**

The prospect is in the Lower Paleozoic or possibly Upper Precambrian Birch Creek Schist, comprising quartz-sericite schist, quartzite, and a few interbeds of massive marble (Wilson and others, 1998). Locally, Lower Tertiary and Upper Cretaceous granites intrude the metasedimentary rocks. The deposit consists of quartz veins containing stibnite and minor galena and sphalerite. No gold and silver has been reported (Cobb, 1978: OFR 78-1062).

**Alteration:**

**Age of mineralization:**

Probably Late Cretaceous or younger.

**Deposit model:**

Simple Sb (Cox and Singer, 1986; model 27d)

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

27d

**Production Status:** Undetermined.

**Site Status:** Inactive

**Workings/exploration:**

Surface exploration and workings only.

**Production notes:**

**Reserves:**

It has been estimated that 200 tons of high grade antimony ore could be recovered from the deposit (Joesting, 1941).

**Additional comments:**

**References:**

Brooks, 1911; Capps, 1912; Joesting, 1942 (MI 67-1); Joesting, 1943; Berg and Cobb, 1967; Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062); Wilson and others, 1998.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (near 'Rock Creek')

**Site type:** Prospect

**ARDF no.:** HE099

**Latitude:** 63.90

**Quadrangle:** HE D-2

**Longitude:** 147.79

**Location description and accuracy:**

The map site of this prospect is at an elevation of about 3,500 feet, in the valley of (informally named) Rock Creek, about 2.4 miles from its junction with Wood River. The site is in sec. 5, T. 11 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 1 mile. This is location 2 of Clark and Cobb (1972).

**Commodities:**

**Main:** Sb

**Other:**

**Ore minerals:** Stibnite

**Gangue minerals:** Quartz

**Geologic description:**

Limited information suggests that this deposit consists of one or more quartz-antimony veins near the contact between the Keevy Peak Formation to the north and Birch Creek Schist to the south (Wilson and others, 1998). The veins may be related to Upper Cretaceous and Lower Tertiary intrusive rocks that cut the metasedimentary rocks nearby.

**Alteration:**

**Age of mineralization:**

Late Cretaceous or younger, assuming that the deposit is related to the intrusive rocks.

**Deposit model:**

Simple Sb (Cox and Singer, 1986; model 27d)

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

27d

**Production Status:** None



**Site Status:** Inactive

**Workings/exploration:**

Surface exploration only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Joesting, 1943; Berg and Cobb, 1967; Wahrhaftig, 1970 (GQ 804); Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062); Wilson and others, 1998.

**Primary reference:** Joesting, 1943

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (upper Chute Creek)

**Site type:** Prospect

**ARDF no.:** HE100

**Latitude:** 63.902

**Quadrangle:** HE D-2

**Longitude:** 147.715

**Location description and accuracy:**

This prospect is at an elevation of about 5,400 feet, on the east side of the valley of upper Chute Creek. The map site is about 1.25 mile northwest of VABM 7437 (A1), in the SE1/4 of sec. 3, T. 12 S., R. 1 W., of the Fairbanks Meridian. The accuracy of the location is within 0.25 mile.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Malachite

**Gangue minerals:** Quartz

**Geologic description:**

Prospect is in the Lower Paleozoic Keevy Peak Formation and consists of surficial malachite in quartz-sericite schist.

**Alteration:**

Oxidation of copper mineral(s) to malachite.

**Age of mineralization:**

Mineralization was probably syngenetic with the host rocks (Early Paleozoic).

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Exploration consists of surface sampling and trenching.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

www.grayd.com, 1999.

**Primary reference:** www.grayd.com, 1999

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Chute Creek****Site type:** Mine**ARDF no.:** HE101**Latitude:** 63.94**Quadrangle:** HE D-2**Longitude:** 147.74**Location description and accuracy:**

The Chute Creek mine is at an elevation of about 3,500 feet on the southwest side of Chute Creek. It is at the NE1/4 of sec. 28, T. 11 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 2 miles. This is location 4 of Clark and Cobb (1972), and location 5 of Cox and others (1989).

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

The Chute Creek mine is in Totatlanika Schist, a sequence mainly of predominantly felsic and mafic metavolcanic and metavolcaniclastic rocks that is dated as Early Mississippian to Middle Devonian (Wilson and others, 1998). At the mine the schist is cut by Cretaceous(?) rhyolite porphyry. The deposit consists of disseminated pyrite, in a zone 100 to 250 ft wide, in altered and sheared rhyolite porphyry. Capps (1912) reported grades of up to 0.435 ounce of gold per ton.

**Alteration:**

Phyllic.

**Age of mineralization:**

Cretaceous(?) or younger.

**Deposit model:**

Porphyry Cu-Au(?) (Cox and Singer, 1986; model 20c)

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

20c?

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

The mine has both surface and underground workings. In 1910 a 30 foot adit was driven. Capps (1911) reported that a small mill operated at the site for a month in 1909.

**Production notes:**

Unknown.

**Reserves:**

**Additional comments:**

**References:**

Brooks, 1910; Capps, 1911; Capps, 1912; Berg and Cobb, 1967; Wahrhaftig, 1970 (GQ 804); Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062); Eakins and others, 1985; Cox and others, 1989; Wilson and others, 1998.

**Primary reference:** Capps, 1912

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Glacier Creek****Site type:** Prospect**ARDF no.:** HE102**Latitude:** 63.98**Quadrangle:** HE D-2**Longitude:** 147.62**Location description and accuracy:**

The Glacier Creek claim block is at an elevation of about 4,400 feet, about midway between Sheep and Galcier creeks. The map site is in the SE1/4 of sec. 7, T. 11 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 3,000 feet.

**Commodities:****Main:** Ag, Au, Cu, Pb, Zn**Other:****Ore minerals:** Chalcopyrite, galena, sphalerite**Gangue minerals:** Chlorite, feldspar, quartz, white mica**Geologic description:**

The country rocks at the Glacier Creek prospect are the Lower Mississippian to Middle Devonian Totatlanika Schist, composed predominantly of mafic and felsic metavolcanic and metavolcaniclastic rocks, minor pelitic schist, and fossiliferous marble (Wilson and others, 1998). The deposit consists of stratabound lenses of massive sulfides in strongly altered rhyolite schist (www.grayd.com, 1999). The sulfide minerals are chalcopyrite, galena, sphalerite. The hostrocks and stratabound massive sulfides indicate that the Galcier Creek prospect is a metamorphosed volcanogenic massive sulfide deposit.

**Alteration:**

The alteration minerals are chlorite and white mica.

**Age of mineralization:**

The sulfide minerals probably are syngenetic with their Lower Mississippian to Middle Devonian host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

At least three holes were drilled in the late 1990's, along with surface mapping and geo-chemical sampling.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Wilson and others, 1998.

**Primary reference:** [www.grayd.com](http://www.grayd.com), 1999

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Unnamed (head of Kansas Creek)****Site type:** Prospect**ARDF no.:** HE103**Latitude:** 63.86**Quadrangle:** HE D-2**Longitude:** 147.61**Location description and accuracy:**

This prospect is at an elevation of about 4,900 feet on the south side of the drainage basin at the head of Kansas Creek, approximately 8 miles upstream from its mouth on the Wood River. It is approximately 2 miles southeast of VABM 7437 (A1). The map site is in sec. 19, T. 12 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 1 mile. This is location 5 of Clark and Cobb (1972) and location 15 of Cox and others (1989).

**Commodities:****Main:** Pb, Sb, Zn**Other:****Ore minerals:** Galena, sphalerite, stibnite**Gangue minerals:** Quartz**Geologic description:**

This prospect is in the Lower Paleozoic or possibly Late Precambrian Birch Creek Schist, which consists of quartz-sericite schist, quartzite, and a few interbeds of massive marble (Wilson and others, 1998). Lower Tertiary and Upper Cretaceous granites intrude the metasedimentary rocks less than one mile to the south. The deposit consists of quartz lenses containing stibnite, minor galena, and sphalerite. The lenses are up to 6 feet thick and trend northeast. Samples contain as much as 63% antimony (Joesting, 1943).

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

Probably Late Cretaceous or younger, assuming deposit is related to nearby granitic intrusive rocks.

**Deposit model:**

Simple Sb (Cox and Singer, 1986; model 27d)



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

27d

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

Only surface workings. Samples contain as much as 63% antimony (Joesting, 1943).

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

Brooks, 1911; Capps, 1912; Joesting, 1942 (MR 194-11); Joesting, 1943; Ebbley and Wright, 1948; Berg and Cobb, 1967; Clark and Cobb, 1972; Cox and others, 1989; Wilson and others, 1998.

**Primary reference:** Joesting, 1943**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s): Cirque****Site type:** Prospect**ARDF no.:** HE104**Latitude:** 63.78**Quadrangle:** HE D-2**Longitude:** 147.60**Location description and accuracy:**

The Cirque prospect is at an elevation of about 5,500 feet in a cirque in the south wall of upper West Fork Little Delta River. The map site is in the SW1/4 of sec. 17, T. 13 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 2 miles.

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

The country rocks at the Cirque prospect are Upper Devonian? felsic metavolcanic rocks, chiefly dark- to medium-gray, fine- to medium-grained schist and phyllite, that locally contain relict phenocrysts of quartz, orthoclase, and plagioclase (Wilson and others, 1998). The deposit generally consists of stratiform layers of massive sulfides, chiefly pyrite, chalcopyrite, galena, and sphalerite. Two ore bearing zones have been identified: the Discovery and Dol zones. The Discovery zone is hosted in carbonaceous shale and appears to follow a contact with rhyolite schist. The sulfide layer is massive to banded and can be traced in outcrop for about 20 meters with widths up to 2.8 meters. The zone remains open in both directions but is covered by talus and scree. Surface samples over a 2.4 meter width at the Discovery zone contain an average value of 3.84% zinc, 2.76% lead, and 0.49% copper, plus 3.73 grams gold and 98.5 grams silver per tonne.

The Dol zone is in dolomite interbedded with shale. The zone has been traced in scattered outcrops for about 200 meters. All outcrops sampled returned anomalous base and precious metal values. Highlights include a 1-meter chip sample that assayed 5.57% zinc, 2.24% lead, and 0.31% copper, and 0.41 gram gold and 33 grams silver per tonne (The Northern Miner, v. 85, no. 24).

**Alteration:**

Pyrite and sericite.

**Age of mineralization:**

Mineralization was probably syngenetic with the Upper Devonian host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

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

Surface exploration mostly includes soil grids, rock-chip sampling and trenching. In 1994, a ground geophysical survey delineated a 670-meter-long electromagnetic anomaly coincident with the Dol zone. There was unknown amount of drilling in 1999.

Surface samples over a 2.4 meter width at the Discovery zone contain an average value of 3.84% zinc, 2.76% lead, and 0.49% copper, plus 3.73 grams gold and 98.5 grams silver per tonne.

The Dol zone highlights include a 1-meter chip sample that assayed 5.57% zinc, 2.24% lead, and 0.31% copper, and 0.41 gram gold and 33 grams silver per tonne (The Northern Miner, v. 85, no. 24).

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

Wilson and others, 1998; The Northern Miner, 1999, v. 85, no. 24.

**Primary reference:** The Northern Miner, 1999, v.85, no. 24**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s):** Unnamed (northeast of upper Wood River)

**Site type:** Occurrence

**ARDF no.:** HE105

**Latitude:** 63.738

**Quadrangle:** HE C-2

**Longitude:** 147.566

**Location description and accuracy:**

This occurrence is at an elevation of about 4,700 feet, in the headwaters of northeast tributaries to upper Wood River. The site is approximately 1 mile west of peak 6,850, in the NW1/4 of sec. 4, T. 14 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 2000 feet. This is location 5 of Sherwood and others (1976).

**Commodities:**

**Main:** Au

**Other:** Cu

**Ore minerals:** Malachite

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this occurrence are Upper Triassic carbonaceous, calcareous shale, argillite, sandstone, siltstone, and limestone, along with numerous dikes, sills, and small plugs of altered diabase and gabbro (Wilson and others, 1998). The occurrence consists of gossan, and of malachite in fractures in the sedimentary rocks. Samples of the gossan contained 1 ppm gold (Sherwood and others, 1976).

**Alteration:**

Locally conspicuous iron staining and oxidation of copper minerals.

**Age of mineralization:**

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface exploration only. Samples of the gossan contained 1 ppm gold (Sherwood and others, 1976).

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

Sherwood and others, 1976; Wilson and others, 1998.

**Primary reference:** Sherwood and others, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south of upper Wood River)

**Site type:** Occurrence

**ARDF no.:** HE106

**Latitude:** 63.732

**Quadrangle:** HE C-2

**Longitude:** 147.662

**Location description and accuracy:**

This occurrence is at an elevation of about 4,000 feet, adjacent to a north-flowing tributary to upper Wood River. The map site is in the NW1/4 of sec. 1, T. 14 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 2,000 feet. This is location 7 of Sherwood and others (1976).

**Commodities:**

**Main:** Au, Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:**

**Geologic description:**

The general area of this occurrence is underlain by the Devonian Yanert Fork sequence, which consists of siliceous mudstone, argillite, slate, phyllite, semischist, and impure quartzite, and minor metachert and metavolcanic rocks. The bedded rocks are cut by Triassic(?) gabbro sills and dikes (Wilson and others, 1998). The occurrence consists of iron-stained, chalcopyrite- and pyrite-bearing gabbro, and pyritic metasedimentary rocks. Samples of the sulfide-bearing rocks contain up to 172 ppm copper and 0.7 ppm gold (Sherwood and others, 1976).

**Alteration:**

**Age of mineralization:**

Probably Late Triassic.

**Deposit model:**

Besshi massive sulfide(?) (Cox and Singer, 1986; model 24b)

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

24b(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface samples only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Sherwood and others, 1976; Wilson and others, 1998.

**Primary reference:** Sherwood and others, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (southwest head of Wood River)

**Site type:** Occurrence

**ARDF no.:** HE107

**Latitude:** 63.707

**Quadrangle:** HE C-2

**Longitude:** 147.616

**Location description and accuracy:**

This occurrence is at an elevation of about 4,700 feet southwest of the head of Wood River. It is approximately 0.4 miles north-northwest of peak 6,445, in the NE1/4 of sec. 18, T. 14 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 2000 feet. This is location 16 of Sherwood and others (1976).

**Commodities:**

**Main:** Au

**Other:** Cu

**Ore minerals:**

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this occurrence are the Devonian Yanert Fork sequence, an intensely deformed, thick, marine sequence dominantly of metasedimentary and metavolcanic rocks. The bulk of sequence is dark-gray to black carbonaceous shale with interbedded lithic sandstone and siltstone (Wilson and others, 1998). The occurrence is in hydrothermally altered gabbroic sills and dikes that cut the metasedimentary rocks. Samples of the altered zones show elevated gold and copper values. One sample contained 0.5 ppm gold (Sherwood and others, 1976).

**Alteration:**

The hydrothermal alteration is not described.

**Age of mineralization:**

The gabbroic hostrocks are undated, but may be Triassic.

**Deposit model:**

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



**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Sherwood and others, 1976; Wilson and others, 1998.

**Primary reference:** Sherwood and others, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (in headwaters of Wood River)

**Site type:** Occurrence

**ARDF no.:** HE108

**Latitude:** 63.686

**Quadrangle:** HE C-2

**Longitude:** 147.658

**Location description and accuracy:**

This occurrence is at an elevation of about 6,500 feet on the west wall of a hanging-valley glacier above the southwest head of Wood River. The map site is approximately 0.5 mile southeast of peak 8,115, at the center of sec. 24, T. 14 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 2,000 feet. This is location 22 of Sherwood and others (1976).

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this occurrence are the Devonian Yanert Fork sequence, an intensely deformed, thick marine sequence of dominantly of metasedimentary and metavolcanic rocks. Most of the sequence is siliceous mudstone, argillite, slate, phyllite, semischist, impure quartzite, and metachert. The sequence is intruded by gabbroic dikes and sills (Wilson and others, 1998). The occurrence consists of chalcopyrite disseminations in the gabbroic sills and dikes. A sample contained 750 ppm copper and 2.4 ppm silver (Sherwood and others, 1976).

**Alteration:**

**Age of mineralization:**

Gabbroic hostrocks are undated, but may be Triassic.

**Deposit model:**

Besshi massive sulfide(?) (Cox and Singer, 1986; model 24b)

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

24b(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface exploration only. A sample contained 750 ppm copper and 2.4 ppm silver (Sherwood and others, 1976).

**Production notes:**

**Reserves:**

**Additional comments:**

One of several minor copper showings in this belt of rocks.

**References:**

Sherwood and others, 1976; Wilson and others, 1998.

**Primary reference:** Sherwood and others, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (north of lower Yanert Glacier)

**Site type:** Occurrence

**ARDF no.:** HE109

**Latitude:** 63.660

**Quadrangle:** HE C-2

**Longitude:** 147.684

**Location description and accuracy:**

This occurrence is at an elevation of about 7,000 feet, on a nunatak about 0.5 mile south-southeast of peak 7850. The map site is in the NE1/4 of sec. 35, T. 14 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 2,000 feet. This is location 24 of Sherwood and others (1976).

**Commodities:**

**Main:** Cu

**Other:** Au

**Ore minerals:** Chalcopyrite

**Gangue minerals:**

**Geologic description:**

The general area of this prospect is underlain by the Devonian Yanert Fork sequence which consists of siliceous mudstone, argillite, slate, phyllite, semischist, and impure quartzite, and minor metachert and metavolcanic rocks. The bedded rocks are cut by Triassic(?) sills and dikes (Wilson and others, 1998). The deposit reportedly consists of disseminated chalcopyrite and other sulfides, adjacent to a gabbro sill. Samples contained 2,300 ppm copper and 0.5 ppm gold (Sherwood and others, 1976).

**Alteration:**

**Age of mineralization:**

Possibly Late Triassic.

**Deposit model:**

Besshi massive sulfide(?) (Cox and Singer, 1986; model 24b)

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

24b(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface samples only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Sherwood and others, 1976; Wilson and others, 1998.

**Primary reference:** Sherwood and others, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (upper Edgar Creek)

**Site type:** Occurrence

**ARDF no.:** HE110

**Latitude:** 63.633

**Quadrangle:** HE C-2

**Longitude:** 147.903

**Location description and accuracy:**

This occurrence is at an elevation of about 5,500 feet, in the eastern headwaters of upper Edgar Creek, a tributary to the Yanert Fork River. The map site is in the NE1/4 of sec. 10, T. 15 S., R. 2 W., of the Fairbanks Meridian. The location is accurate to within 2000 feet. This is location 26 of Sherwood and others (1976).

**Commodities:**

**Main:** Cu

**Other:** Au

**Ore minerals:** Chalcopyrite, malachite

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this occurrence are the Devonian Yanert Fork sequence, consisting mainly of siliceous mudstone, argillite, slate, phyllite, semischist, and impure quartzite. Thin interbeds of banded metachert and metavolcanic rocks are also present (Wilson and others, 1998). The bedded rocks are cut by Triassic(?) gabbroic sills and dikes. The occurrence consists of disseminations of chalcopyrite and possibly other sulfide minerals, in the metasedimentary rocks near a gabbro sill. Locally, the copper mineral(s) are oxidized to malachite. Samples contained 4,700 ppm copper and 0.4 ppm gold (Sherwood and others, 1976).

**Alteration:**

**Age of mineralization:**

Possibly Triassic, assuming that the mineralization is related to the gabbro.

**Deposit model:**

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Surface samples only. Samples contained 4,700 ppm copper and 0.4 ppm gold (Sherwood and others, 1976).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Sherwood and others, 1976; Cobb, 1978 (OFR 78-1062); Wilson and others, 1998.

**Primary reference:** Sherwood and others, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): East Fork Susitna River****Site type:** Prospect**ARDF no.:** HE111**Latitude:** 63.39**Quadrangle:** HE B-1**Longitude:** 147.05**Location description and accuracy:**

This placer gold prospect is on a south-flowing tributary of the East Fork Susitna River, about 7.3 miles from its junction with the Susitna River. The placer ground extends for an unknown distance upstream and downstream from the map site, which is approximately in the center of sec. 6, T. 18 S., R. 4 E., of the Fairbanks Meridian. The site is accurate to within 1 mile.

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

The area of the placer prospect is underlain by Quaternary alluvium, but the catchment basin of the creek contains Cretaceous tonalite, granodiorite, quartz diorite, diorite, and quartz monzodiorite (Wilson and others, 1998). The lode source of the placer gold is unknown.

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

Quaternary.

**Deposit model:**

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

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

39a



**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

There has been only surface exploration.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south wall of lower Yanert Glacier)

**Site type:** Occurrence

**ARDF no.:** HE112

**Latitude:** 63.59

**Quadrangle:** HE C-2

**Longitude:** 147.71

**Location description and accuracy:**

This occurrence is at an elevation of about 5,000 feet, on the south wall of lower Yanert Galcier. The map site is about 4.8 miles northeast of Nenana Mountain, in the NE1/4 of sec. 27, T. 15 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within half a mile. This is locality 21 of Cox and others (1989).

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite, pyrite, pyrrhotite

**Gangue minerals:**

**Geologic description:**

The country rocks at this occurrence are Upper Triassic calcareous metasedimentary rocks and Jurassic to Cretaceous graywacke, intruded by Tertiary granite. The deposit consists of chalcopyrite-pyrite-pyrrhotite-bearing skarn at the granite contact (Cox and others, 1989).

**Alteration:**

Formation od skarn at granite contact.

**Age of mineralization:**

Probably Tertiary.

**Deposit model:**

Cu skarn (Cox and Singer, 1986; model 18b)

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

18b

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has only been surface sampling.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Cox and others, 1989.

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

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Nenana

**Site type:** Prospect

**ARDF no.:** HE113

**Latitude:** 63.493

**Quadrangle:** HE B-2

**Longitude:** 147.637

**Location description and accuracy:**

The Nenana prospect is at an elevation of about 4,800 feet, 1.75 miles west southwest of VABM 5756 (Fork). The map site is in the SW1/4 of sec. 30, T. 16 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 1500 feet. This is location A-76 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Cu, Zn

**Other:** Ag

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

**Gangue minerals:**

**Geologic description:**

The area of the Nenana prospect is underlain by Upper Triassic, thin-bedded, commonly cross-bedded, carbonaceous shale, argillite, sandstone, and siltstone. The strata are cut by numerous dikes, sills, and plugs of altered diabase and gabbro, and by Upper Cretaceous?-Lower Tertiary granites (Wilson and others, 1998). The prospect consists of pyrite?, chalcopyrite, and sphalerite disseminated in the sedimentary rocks.

**Alteration:**

**Age of mineralization:**

The sulfide minerals probably are syngenetic with their Upper Triassic host rocks.

**Deposit model:**

Besshi massive sulfide (Cox and Singer, 1986; model 24b)

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

24b

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Exploration consisted of rock-chip and soil sampling (unpublished report for the New Alaska Syndicate, 1977).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (west of lower West Fork Glacier)

**Site type:** Prospect

**ARDF no.:** HE114

**Latitude:** 63.482

**Quadrangle:** HE B-2

**Longitude:** 147.577

**Location description and accuracy:**

This prospect is at an elevation of about 5,100 feet, on the crest of a ridge above the west wall of lower West Fork Glacier. The map site is about a mile south-southeast of VABM 5756 (Fork) in the SE1/4 of sec. 32, T. 16 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 1,500 feet. This is location A-75 of Balen (1990: OFR 90-34).

**Commodities:**

**Main:** Au, Pb

**Other:**

**Ore minerals:**

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of this prospect include: Upper Triassic calcareous shale, argillite, sandstone and siltstone, and numerous dikes, sills, and plugs of altered diabase and gabbro; Upper Cretaceous(?) or Lower Tertiary granitic plutons; and younger, Lower Tertiary granitic plutons (Wilson and others, 1998). The prospect consists of gold- and lead-bearing quartz veins. The ore mineral(s) are unspecified.

**Alteration:**

**Age of mineralization:**

Probably Late Cretaceous or younger.

**Deposit model:**

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

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

22c

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

There has only been surface sampling to date.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Cleopatra****Site type:** Prospect**ARDF no.:** HE115**Latitude:** 63.48**Quadrangle:** HE B-2**Longitude:** 147.60**Location description and accuracy:**

The Cleopatra prospect is at an elevation of about 4,500 feet on the north wall of an east-flowing, unnamed tributary to the West Fork Glacier. It is about 1.6 miles south-southwest of VABM 5,756 (Fork), in the NW1/4 of sec. 5, T. 17 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 0.5 mile. This is location 25 of Cox and others (1989).

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

The country rocks in the area of the Cleopatra prospect include Upper Triassic, intensely deformed and metamorphosed, interbedded shale, argillite, sandstone, siltstone, and argillaceous limestone; and dikes, sills, and small plugs of altered diabase and gabbro (Wilson and others, 1998). These rocks in turn are intruded by Upper Cretaceous(?) and Lower Tertiary granite plutons. The deposit consists of stratabound disseminated chalcopyrite and pyrrhotite in the metasedimentary rocks.

**Alteration:**

The rocks are strongly leached and altered to gossan at the surface.

**Age of mineralization:**

The disseminated sulfides are probably syngenetic with their Late Triassic host rocks.

**Deposit model:**

Besshi massive sulfide (Cox and Singer, 1986; model 24b)

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



24b

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Rocks are stream-sediment sampling, ground EM and magnetic geophysical surveys were conducted in the mid-1970s (unpublished report for the New Alaska Syndicate, 1977).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Cox and others, 1989; Wilson and others, 1998.

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

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (west wall of West Fork Glacier)

**Site type:** Prospect

**ARDF no.:** HE116

**Latitude:** 63.474

**Quadrangle:** HE B-2

**Longitude:** 147.589

**Location description and accuracy:**

This prospect is at an elevation of about 4,200 feet in a creek draining the west wall of West Fork Glacier. The map site is in the NW1/3 of sec. 5, T. 17 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 2,000 feet. This is location 26 of Cox and others (1989), location A-74 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Ag, Cu, Zn

**Other:**

**Ore minerals:** Chalcopyrite, pyrrhotite, sphalerite

**Gangue minerals:**

**Geologic description:**

The are of this prospect is underlain by Upper Triassic, thin-bedded, commonly cross-bedded, carbonaceous shale, argillite, sandstone, and siltstone. The strata are cut by numerous dikes, sills, and plugs of altered diabase and gabbro (Wilson and others, 1998), and by Upper Cretaceous?-Lower Tertiary granites. The strata are complexly folded. The prospect is described as a polymetallic replacement deposit containing chalcopyrite, pyrrhotite, and sphalerite (Cox and others, 1989).

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Polymetallic replacement (Cox and Singer, 1986; model 19a)

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

19a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface exploration only, to date. Soil sampling, stream-sediment sampling, ground EM and magnetic geophysical surveys were conducted in the mid-1970's (unpublished report for the New Alaska Syndicate, 1977).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

MacKevett and Holloway, 1977 (OFR 77-169A); Cobb, 1978 (OFR 78-1062); Cox and others, 1989; Wilson and others, 1998.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (between upper West Fork and Yanert glaciers)

**Site type:** Occurrence

**ARDF no.:** HE117

**Latitude:** 63.590

**Quadrangle:** HE C-1

**Longitude:** 147.294

**Location description and accuracy:**

This occurrence is at an elevation of about 6,300 feet, about midway between upper West Fork and Yanert Galciers. The map site is about 3.9 miles south-southwest of Mount Deborah, in the NE1/4 of sec. 26, T. 15 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to within 2,000 feet. This is location 27 of Sherwood and others (1976).

**Commodities:**

**Main:** Au, Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this occurrence are Upper Triassic calcareous shale, argillite, sandstone, siltstone, and limestone cut by numerous dikes, sills, and plugs of altered diabase and gabbro (Wilson and others, 1998). The deposit apparently consists of disseminations of chalcopyrite in metasedimentary rocks near the contact of altered gabbro. Samples of the chalcopyrite-bearing rock contained 980 ppm copper and 0.2 ppm gold (Sherwood and others, 1976).

**Alteration:**

**Age of mineralization:**

Late Triassic or younger.

**Deposit model:**

Besshi massive sulfide(?) (Cox and Singer, 1986; model 24b)

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

24b(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface exploration only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Sherwood and others, 1976; Wilson and others, 1998.

**Primary reference:** Sherwood and others, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (southeast of Hess Mountain)

**Site type:** Prospect

**ARDF no.:** HE118

**Latitude:** 63.62

**Quadrangle:** HE C-1

**Longitude:** 147.12

**Location description and accuracy:**

This prospect is at an elevation of about 8,500 feet, about 1.6 miles southeast of the summit of Hess Mountain. The map site is in the NW1/4 of sec. 14, T. 15 S., R. 3 W., of the Fairbanks Meridian. The location is accurate to within 1 mile.

**Commodities:**

**Main:** Au, Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this prospect are Upper Triassic, carbonaceous, calcareous shale, argillite, sandstone, and siltstone. This sequence is cut by dikes, sills, and plugs altered diabase and gabbro (Wilson and others, 1998). The deposit presumably consists of auriferous chalcopyrite and possibly other sulfides, disseminated in the sedimentary and (or) intrusive rocks.

**Alteration:**

**Age of mineralization:**

Late Triassic or younger.

**Deposit model:**

Besshi massive sulfide(?) (Cox and Singer, 1986; model 24b)

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

24b(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been only surface mapping and sampling.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Wilson and others, 1998.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corp)

**Last report date:** 4/7/00

**Site name(s): Unnamed****Site type:** Occurrence**ARDF no.:** HE119**Latitude:** 63.70**Quadrangle:** HE C-1**Longitude:** 147.42**Location description and accuracy:**

This occurrence is at an elevation of about 5,700 feet in the northwest wall of the glacier at the head of the West Fork Little Delta River. The site is in the SE1/4 of sec. 18, T. 14 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to within 2,000 feet. This is location 10 of Sherwood and others (1976).

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

The country rocks in the area of this occurrence are the Devonian Yanert Fork sequence, an intensely deformed, thick marine sequence dominantly of metasedimentary and metavolcanic rocks. Most of the sequence is siliceous mudstone, argillite, slate, phyllite, semischist, impure quartzite, and metachert. The sequence is intruded by gabbroic dikes and sills (Wilson and others, 1998). The occurrence consists of chalcopyrite and pyrite disseminations in gabbro, and of a gossan zone near a gabbro sill. Samples contained 833 ppm copper and 0.2 to 0.5 ppm gold (Sherwood and others, 1976).

**Alteration:**

Local conspicuous iron staining.

**Age of mineralization:**

Gabbro hostrocks are undated but may be Triassic.

**Deposit model:**

Besshi massive sulfide(?) (Cox and Singer, 1986; model 24b)

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



24b?

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface sampling only. Samples contained 833 ppm copper and 0.2 to 0.5 ppm gold (Sherwood and others, 1976).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Sherwood and others, 1976; Wilson and others, 1998.

**Primary reference:** Sherwood and others, 1976

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): West Fork****Site type:** Prospect**ARDF no.:** HE120**Latitude:** 63.81**Quadrangle:** HE D-1**Longitude:** 147.49**Location description and accuracy:**

The West Fork prospect is at an elevation of about 4,500 feet, in the south wall of an east-flowing branch of West Fork Little Delta River. The map site is about 4 miles southwest of the junction of Forgotten Creek, in the NW1/4 of sec. 11, T. 13 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 0.5 mile.

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

The country rocks at the West Fork prospect are Upper Devonian(?) felsic metavolcanic rocks consisting of schist and phyllite, locally containing relict phenocrysts of quartz, orthoclase, and plagioclase (Wilson and others, 1998). The deposit consists of stratiform layers of massive pyrite, galena, and sphalerite, accompanied by quartz and sericite. Samples of a 20-30-centimeter-wide massive-sulfide horizon contained 3.68% lead, 4.05% zinc, 131 grams of silver per tonne and 0.38 grams of gold per tonne (www.grayd.com, 1999).

**Alteration:**

Quartz and sericite.

**Age of mineralization:**

Mineralization was probably syngenetic with the Upper Devonian(?) host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

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

The prospect has been explored by surface sampling, geophysical work, and one drill hole (Inmet Mining, personal communication, 1999). Samples of a 20-30-centimeter-wide massive-sulfide horizon contained 3.68% lead, 4.05% zinc, 131 grams of silver per tonne and 0.38 grams of gold per tonne (www.grayd.com, 1999).

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

Wilson and others, 1998; www.grayd.com, 1999.

**Primary reference:** www.grayd.com, 1999**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s):** Unnamed (headwaters of Glory Creek)

**Site type:** Prospect

**ARDF no.:** HE121

**Latitude:** 63.857

**Quadrangle:** HE D-1

**Longitude:** 147.482

**Location description and accuracy:**

This prospect is at an elevation of about 5,100 feet, about 1 mile east of the junction of Glory Creek with Dry Creek. The site is about 2 miles southwest of VABM New, in sec. 23, T. 12 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 2,000 feet. This is location 6 of Clark and Cobb (1972).

**Commodities:**

**Main:** Pb, Sb, Zn

**Other:** Ag, Au

**Ore minerals:** Galena, pyrite, sphalerite, stibnite

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of this prospect are Lower Paleozoic to possibly Upper Precambrian Birch Creek Schist. Lower Tertiary and Upper Cretaceous intrusive rocks occur 1.2 miles southwest of the prospect. The deposit is in Birch Creek Schist and consists of quartz veins and pods containing pyrite, stibnite, galena, and sphalerite (Joesting, 1943).

**Alteration:**

**Age of mineralization:**

Probably Late Cretaceous or younger.

**Deposit model:**

Simple Sb (Cox and Singer, 1986; model 27d)

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

27d

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Only been surface exploration has been reported.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Joesting, 1942 (MR 194-11); Joesting, 1943; Berg and Cobb, 1967; Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Berg and Cobb, 1967

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Red Mountain Creek; WTF (Western Tundra Flats); Dry Creek

**Site type:** Prospect

**ARDF no.:** HE122

**Latitude:** 63.92

**Quadrangle:** HE D-1

**Longitude:** 147.38

**Location description and accuracy:**

This site represents an area of about a square mile between upper Red Mountain Creek and Dry Creek. The map site is at an elevation of about 4,300 feet, on the west wall of the valley of upper Red Mountain Creek, in the SW1/4 of sec. 33, T. 11 S., R. 2 E., of the Fairbanks Meridian. This is locality 7 of Cox and others (1989).

**Commodities:**

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

**Other:**

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

**Gangue minerals:** Chlorite, feldspar, quartz, white mica

**Geologic description:**

The country rocks in the area of this prospect are mapped as the Lower Mississippian to Middle Devonian Totatlanika Schist, composed predominantly of metavolcanic and metavolcaniclastic rocks, and subordinate amounts of intercalated metasedimentary rocks (Wilson and others, 1998). The dominant structural fabric on the property is a strong mylonitic foliation, and there is a consistent east-northeasterly lineation that plunges at about 20-30 degrees. The deposit is in greenschist-grade metasedimentary rocks and altered rhyolite schist, and consists of stratiform bodies of massive sulfides that occur on the northern and southern limbs of an east-trending synclinal fold. The southern limb of the syncline contains three ore horizons that dip to the north at about 70 to 80 degrees (Schuster, 1998). These are referred to as the DC zones, which have been subdivided into the DC-North, DC-South, and DC-17 zones.

The DC-North zone is defined by a 2-kilometer-long EM conductor. This zone has been further subdivided into three areas: Discovery, which roughly bisects the EM anomaly; Lago Creek, which is 200-400 meters west of the Discovery area; and Fosters Creek, about 800 meters west of the Discovery area. In the Fosters Creek area, drilling has intercepted a 29-meter interval (true width) grading 6.22 percent zinc, 2.56 percent lead and 0.22 percent copper, as well as 182.8 grams silver and 1.03 grams gold per tonne. A 3.7-

meter intercept in the hole produced assay results as high as 23.58 percent zinc, 8.46 percent lead, 1.02 percent copper, and 531.5 grams silver and 2.24 grams gold (Schuster, 1998). The DC-South zone is virtually unexplored except for a few reconnaissance drill holes. The DC-17 zone is a 15-meter-thick bed of pyrite (with minor amounts of lead and zinc) that is believed to be genetically related to other zones.

The northern limb of the syncline dips gently to the south and hosts the WTF zone, a layer of massive sulfides 0.3 to 5 meters thick that has been tested by 26 widely-spaced drill holes (Schuster, 1998).

**Alteration:**

The footwall schist contains chlorite and sericite.

**Age of mineralization:**

Mineralization was syngenetic with the Lower Mississippian to Middle Devonian host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

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

Exploration of the area includes an EM geophysical survey and extensive drilling. Press releases indicate that over 60 drill holes totaling approximately 7600 m have been drilled to date (Robertson, 1998; The Northern Miner, 1998 and 1999: v. 84, nos. 26 and 52).

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

Reserves for part of this deposit have been estimated at 1.10 million tonnes grading 0.15 percent copper, 2.5 percent lead, 7.9 percent zinc, and 270 grams silver, and 1.9 grams of gold per tonne (Nokleberg and others, 1987). An estimate based on 38 of 60 holes drilled to test the southern limb of the syncline gave an inferred resource of 2.9 million tonnes grading 4.4 percent zinc, 1.9 percent lead, 0.2 percent copper, and 0.55 gram gold and 93.6 grams silver per tonne. Included in this estimate is a higher-grade core of 1.5 million tonnes grading 6.4 percent zinc, 2.9 percent lead, 0.3 percent copper, and 0.79 gram gold and 123.8 grams silver per tonne. The bulk of the resource is in the Fosters Creek and Discovery zones, respectively in pyritic sedimentary rocks and intensely altered rhyolite. On the north limb of the syncline, the WTF resource currently (1999) stands at 2.8 million tonnes grading 6 percent zinc, 2.5 percent lead, 0.1 percent copper, and 0.9 gram gold and 178.2 grams silver per tonne (The Northern Miner, 1998 and 1999:

v. 84, nos. 26 and 52).

**Additional comments:**

**References:**

Nokleberg and others, 1987; Cox and others, 1989; Nokleberg and others, 1994; Robertson, 1998; Schuster, 1998; The Northern Miner, 1998; Wilson and others, 1998; The Northern Miner, 1999.

**Primary reference:** Nokleberg and others, 1994

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (flank of Dry Creek)

**Site type:** Prospect

**ARDF no.:** HE123

**Latitude:** 63.93

**Quadrangle:** HE D-1

**Longitude:** 147.46

**Location description and accuracy:**

This prospect is at an elevation of about 3,600 feet on the northwest side of Dry Creek, about 3.4 miles west-northwest of the junction of Red Mountain Creek. The map site is at about the center of sec. 25, T. 11 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 0.5 mile.

**Commodities:**

**Main:** Ag, Pb, Zn

**Other:** Cu

**Ore minerals:** Galena, sphalerite

**Gangue minerals:** Chlorite, quartz, sericite

**Geologic description:**

The country rocks at this prospect are the Lower Mississippian to Middle Devonian Totatlanika Schist, composed predominantly of mafic and felsic metavolcanic and metavolcaniclastic rocks, pelitic schist, and minor marble (Wilson and others, 1998). The deposit consists of massive-sulfide lenses in schist (Cox and others, 1989). The lenses are mainly galena and sphalerite, accompanied by chlorite, quartz, and sericite. The schist in the footwall is altered to chlorite and sericite.

**Alteration:**

Footwall alteration zones containing chlorite and sericite.

**Age of mineralization:**

Mineralization was probably syngenetic with the Lower Mississippian to Middle Devonian host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

**Production Status:** None

**Site Status:** Active?

**Workings/exploration:**  
Surface exploration only.

**Production notes:**

**Reserves:**

**Additional comments:**  
The deposit at this prospect is considered to be a satellite of the deposit at the Red Mountain prospect (HE122).

**References:**  
Nokleberg and others, 1987; Cox and others, 1989; Nokleberg and others, 1994; Wilson and others, 1998.

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

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Rod; LEA Creek****Site type:** Prospect**ARDF no.:** HE124**Latitude:** 63.97**Quadrangle:** HE D-1**Longitude:** 147.46**Location description and accuracy:**

The Rod (LEA Creek) prospect is at an elevation of about 4,700 feet, on the east side of a south-flowing tributary to Dry Creek. The map site is about 1 mile south of VABM 6463 (Art), in the NW1/4 of sec. 13, T. 11 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 1 mile.

**Commodities:****Main:** Ag, Pb, Zn**Other:** Cu**Ore minerals:** Galena, sphalerite**Gangue minerals:** Chlorite, quartz, sericite**Geologic description:**

The country rocks at the Rod (LEA Creek) prospect are the Lower Mississippian to Middle Devonian Totatlanika Schist, composed predominantly of felsic and mafic metavolcanic and metavolcaniclastic rocks, pelitic schist, and minor marble (Wilson and others, 1998). The deposit consists of massive-sulfide lenses in schist (www.grayd.com, 1999). The lenses are mainly galena and sphalerite, accompanied by chlorite, quartz, and sericite.

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

Mineralization was probably syngenetic with the Lower Mississippian to Middle Devonian host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Only preliminary surface sampling and hand-trenching has been conducted to date (1999).

**Production notes:**

**Reserves:**

**Additional comments:**

Also see HE122 and HE125.

**References:**

Wilson and others, 1998; [www.grayd.com](http://www.grayd.com), 1999.

**Primary reference:** [www.grayd.com](http://www.grayd.com), 1999

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (head of Slide Creek)

**Site type:** Prospect

**ARDF no.:** HE125

**Latitude:** 63.98

**Quadrangle:** HE D-1

**Longitude:** 147.39

**Location description and accuracy:**

This prospect is at an elevation of about 5,300 feet at the head of Slide Creek. The map site is about 1.3 mile due east of VABM 6463 (Art), in the SE1/4 of sec. 7, T. 11 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to within 1.5 miles.

**Commodities:**

**Main:** Ag, Pb, Zn

**Other:** Au, Cu

**Ore minerals:** Galena, sphalerite

**Gangue minerals:** Quartz, sericite

**Geologic description:**

The country rocks at this prospect are the Lower Mississippian to Middle Devonian Totatlanika Schist, composed predominantly of mafic and felsic metavolcanic and metavolcaniclastic rocks (Wilson and others, 1998). The deposit consists of massive-sulfide lenses in schist. The lenses are chiefly galena and sphalerite, accompanied by quartz and sericite. The footwall schist is altered to chlorite and sericite.

**Alteration:**

Footwall schist is altered to chlorite and sericite.

**Age of mineralization:**

Mineralization was probably syngenetic with the Lower Mississippian to Middle Devonian host rocks.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

**Production Status:** None

**Site Status:** Active?

**Workings/exploration:**

There reportedly has been surface exploration and possibly limited drilling.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Wilson and others, 1998; [www.grayd.com](http://www.grayd.com), 1999.

**Primary reference:** [www.grayd.com](http://www.grayd.com), 1999

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Smog

**Site type:** Occurrence

**ARDF no.:** HE126

**Latitude:** 63.99

**Quadrangle:** HE D-1

**Longitude:** 147.39

**Location description and accuracy:**

This occurrence is at an elevation of about 4,200 feet, on the north side of an east-flowing tributary to upper Slide Creek. The map site is about 1.7 miles northeast of VABM 6463 (Art), in the SE1/4 of sec. 5, T. 11 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to within 1.5 miles. This is locality 6 of Cox and others (1989).

**Commodities:**

**Main:** Pb, Zn

**Other:** Ag, Au, Cu

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

**Gangue minerals:** Chlorite, quartz, sericite

**Geologic description:**

The country rock in the area of this occurrence is the Lower Mississippian to Middle Devonian Totatlanika Schist. The deposit is in schist and consists of lenses of massive chalcopyrite, galena, pyrite, and sphalerite, accompanied by chlorite, quartz, and sericite (www.grayd.com, 1999).

**Alteration:**

Footwall alteration zones contain chlorite and sericite.

**Age of mineralization:**

The deposit is interpreted to have formed synchronously with the deposition of the mid-Paleozoic protoliths of the Totatlanika Schist.

**Deposit model:**

Kuroko massive sulfide (Cox and Singer, 1986; model 28a)

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

28a

**Production Status:** None

**Site Status:** Active?

**Workings/exploration:**  
Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Cox and others, 1989; www.grayd.com, 1999.

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

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s): Newman Creek****Site type:** Prospect**ARDF no.:** HE127**Latitude:** 63.98**Quadrangle:** HE D-1**Longitude:** 147.26**Location description and accuracy:**

This placer gold prospect is near the mouth of Newman Creek, a tributary to Dry Creek. The site is in sec. 12, T. 11 S., R. 2 E., of the Fairbanks Meridian.

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

Newman Creek drainage basin includes Tertiary sandstone and Devonian Totatlanika Schist. The lode source of the placer gold is unknown.

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

Quaternary.

**Deposit model:**

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

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

39a

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

There are only surface placer workings, all dating to 1912 or earlier.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Capps, 1912.

**Primary reference:** Capps, 1912

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (on Dry Creek)

**Site type:** Prospect

**ARDF no.:** HE128

**Latitude:** 63.96

**Quadrangle:** HE D-1

**Longitude:** 147.29

**Location description and accuracy:**

This placer prospect is on Dry Creek between the mouths of Newman Creek and Red Mountain Creek, a distance of approximately 4 miles. The map site is at the midpoint of the placer activity, in sec. 14, T. 11 S., R. 2 E., of the Fairbanks Meridian. This is locality 60 of Clark and Cobb (1972).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Dry Creek is a placer gold prospect. part of the creek drains Tertiary sandstone, conglomerate, shale, and lignite, and part drains Early Mississippian to Middle Devonian Totatlanika Schist, composed predominantly of metavolcanic rocks (Wilson and others, 1998). The auriferous gravels are 4 to 8 feet deep and contain up to 0.17 ounce of gold per cubic yard (Capps, 1912). The upper part of the creek is incised into schist; mining there was hampered by abundance of large boulders and unstable ground (Cobb, 1978: OFR 78-1062).

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Probably inactive

**Workings/exploration:**

Surface development only. The auriferous gravels contain up to 0.17 ounce of gold per cubic yard (Capps, 1912).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Capps, 1912; Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062); Bundtzen and others, 1984; Wilson and others, 1998.

**Primary reference:** Capps, 1912

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (middle or upper Newman Creek)

**Site type:** Prospect

**ARDF no.:** HE129

**Latitude:** 63.95

**Quadrangle:** HE D-1

**Longitude:** 147.26

**Location description and accuracy:**

This placer gold prospect is on Newman Creek, a tributary to Dry Creek. The area of placer activity extends in both directions from the map site, which is at about the center of sec. 24, T. 11 S., R. 2 E., of the Fairbanks Meridian. This is locality 61 of Clark and Cobb (1972).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Parts of Newman Creek drain an area underlain by Tertiary sandstone, conglomerate, shale, and lignite, and other portions drain an area underlain by Lower Mississippian to Middle Devonian Totatlanika Schist.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Inactive

**Workings/exploration:**

There are surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brooks, 1911; Capps, 1912; Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Capps, 1912

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Portage Creek****Site type:** Mine**ARDF no.:** HE130**Latitude:** 63.91**Quadrangle:** HE D-1**Longitude:** 147.14**Location description and accuracy:**

This placer gold mine is on Portage Creek, an east-flowing tributary to the West Fork Little Delta River. The area of placer mining is near the landing strip, where Portage Creek turns from south to east. The map site is in sec. 3, T. 12 S., R. 3 E., of the Fairbanks Meridian. This is location 62 of Clark and Cobb (1972).

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

Most of Portage Creek drains Miocene to Pliocene Nenana Gravel and Eocene coal-bearing strata. The Nenana Gravel consists of poorly-consolidated, buff to reddish-brown, fluvial conglomerate and coarse grained sandstone interbedded with mudflow deposits and thin lignite beds (Wilson and others, 1998). The placer gold in Portage Creek probably was derived from small gold paleoplacers in the Nenana Gravel.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Active?

**Workings/exploration:**  
Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brooks, 1910; Capps, 1912; Smith, 1936 (B 864); Smith, 1938; Smith, 1939; Smith, 1942 (B 917); Smith, 1942 (B 926); Smith, 1942 (B 933); Cobb, 1978 (OFR 78-1062); Wilson and others, 1998.

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s): Honolulu****Site type:** Prospect**ARDF no.:** HE131**Latitude:** 63.03**Quadrangle:** HE A-5**Longitude:** 149.48**Location description and accuracy:**

The Honolulu prospect is at an elevation of about 2,950 feet in the headwaters of Honolulu Creek. The location is accurate to within 0.5 mile. The map site is in the SW1/4 of sec. 4, T. 22 S., R. 10 W., of the Fairbanks Meridian. This is location 36 of Cox and others, 1989; location D-22 of Balen (1990: OFR 34-90).

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

The area of the Honolulu prospect is underlain by Lower Cretaceous to Upper Jurassic graywacke and argillite cut by Tertiary granites. The deposit is in highly altered granitic rock and consists of sulfide-rich quartz veinlets (Balen and others, 1991). The sulfide minerals are chalcopyrite, galena, and sphalerite. High tin assays suggest that cassiterite also is present. One channel sample collected across a 60-foot exposure of altered granite contained 1.09 ounce of silver per ton, 0.03 ounce of gold per ton, 1.5% copper, and 250 ppm tin. The highest grade samples contained 141 ounces of silver per ton, 0.05 ounce of gold per ton, 2.3% copper, 6.3% lead, 6% zinc, and 795 ppm tin (Balen, 1990: OFR 34-90; Balen and others, 1991).

**Alteration:**

Extensive silicification and phyllic alteration.

**Age of mineralization:**

The sulfide minerals are in altered Tertiary granite.

**Deposit model:**

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

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

22c

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

Surface workings, and two shallow Winkie holes drilled in the mid-1970's (unpublished report for the New Alaska Syndicate, 1976). One channel sample collected across a 60-foot exposure of altered granite contained 1.09 ounce of silver per ton, 0.03 ounce of gold per ton, 1.5% copper, and 250 ppm tin. The highest grade samples contained 141 ounces of silver per ton, 0.05 ounce of gold per ton, 2.3% copper, 6.3% lead, 6% zinc, and 795 ppm tin (Balén, 1990: OFR 34-90; Balén and others, 1991).

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

Cox and others, 1989; Balén, 1990 (OFR 34-90); Balén and others, 1991.

**Primary reference:** Balén and others, 1991**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s): Honolulu Creek****Site type:** Occurrences**ARDF no.:** HE132**Latitude:** 63.03**Quadrangle:** HE A-5**Longitude:** 149.32**Location description and accuracy:**

Placer gold occurs in several places along Honolulu Creek, from its mouth upstream to Honolulu Pass. The map site is at about the midpoint of these occurrences, in the NW1/4 of sec. 8, T. 22 S., R. 9 W., of the Fairbanks Meridian. This is location D-21 of Balen (1990: OFR 34-90).

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

Honolulu Creek hosts several placer gold occurrences over a distance of about 12 miles. The occurrences were identified during regional sampling by the Bureau of Land Management in the 1980's (Balén, 1990: OFR 34-90; Balén and others, 1991). Lower Honolulu Creek drains Tertiary (Eocene?) granodiorite and granite intruding Lower Cretaceous and Upper Jurassic metaturbidite (Wilson and others, 1998). At the head of the drainage basin, the bedrock consists of thrust slices of Upper Triassic metavolcanic, metavolcanic-clastic, and subordinate metasedimentary rocks intruded by small stocks of Tertiary felsic rocks. The probably multiple sources of the placer gold in Honolulu Creek are unknown, but the rocks in its drainage area contain auriferous lodes elsewhere in the Healy quadrangle (see, for example, HE133 and HE209).

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

Quaternary.

**Deposit model:**

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

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

39a

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

Balen, 1990 (OFR 34-90); Balen and others, 1991; Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s): North Carolina; Antimony Creek****Site type:** Prospect**ARDF no.:** HE133**Latitude:** 63.102**Quadrangle:** HE A-5**Longitude:** 149.419**Location description and accuracy:**

The North Carolina (Antimony Creek) prospect is at an elevation of about 3,600 feet on a spur north of upper Antimony Creek, a tributary of the East Fork Chulitna River. The map site is 0.5 mile southwest of VABM 4780 (Antimony), in sec. 14, T. 21 S., R. 10 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet. This is locality 28 and 29 of Cobb (1978: OFR 78-1062).

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

The country rocks in the area of the prospect consist mainly of Lower Cretaceous and Upper Jurassic, intensely deformed, metamorphosed flysch, probably several thousand meters thick (Wilson and others, 1998). The strata are intruded by felsite dikes, and a pyroxenite plug. The deposit consists of auriferous quartz-pyrite-stibnite veins that cut the flysch. A little gold also occurs in the margins of the felsite dikes. Samples contain up to 37.5% antimony and 6 ppm gold (Hawley and others, 1968), and up to 28% antimony and 520 ppb gold (Balén, 1990: OFR 34-90).

**Alteration:**

The stibnite is oxidized to stibiconite and kermesite.

**Age of mineralization:**

Veins cut Upper Jurassic to Lower Cretaceous metasedimentary rocks.

**Deposit model:**

Simple Sb (Cox and Singer, 1986; model 27d)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**  
27d

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

The property was explored in 1918 by two short tunnels. Samples contain up to 37.5% antimony and 6 ppm gold (Hawley and others, 1968), and up to 28% antimony and 520 ppb gold (Balen, 1990: OFR 34-90).

**Production notes:**

In 1919 approximately 3 tons of ore was stockpiled but never shipped.

**Reserves:**

**Additional comments:**

**References:**

Capps, 1919; Joesting, 1942 (MR 194-11); Joesting, 1943; Berg and Cobb, 1967; Hawley and others, 1968 (OFR 337); Cobb, 1978 (OFR 78-1062); Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Capps, 1919

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): East Fork Chulitna River; Hole****Site type:** Occurrences**ARDF no.:** HE134**Latitude:** 63.14**Quadrangle:** HE A-5**Longitude:** 149.44**Location description and accuracy:**

Placer gold occurs from the mouth of the East Fork Chulitna River, upstream as far as the map site, which is in the NE1/4 of sec. 34, T. 20 S., R. 10 W., of the Fairbanks Meridian. This is location D-26 of Balen (1990: OFR 34-90). The location is accurate to within 1 mile.

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

The East Fork Chulitna River drains an area containing porphyry, skarn, and polymetallic, metamorphic, and epithermal vein deposits, all having significant Au contents. These deposits probably are the source of placer gold in the East Fork Chulitna River. Two placer samples from the site contained traces of gold (Balen, 1990: OFR 34-90).

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface exploration only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** (Balen, 1990 OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s): Middle Fork Chulitna River****Site type:** Occurrences**ARDF no.:** HE135**Latitude:** 63.15**Quadrangle:** HE A-5**Longitude:** 149.49**Location description and accuracy:**

Placer gold occurs along the Middle Fork Chulitna River, upstream from its junction with East Fork Chulitna River to about a mile above Colorado station on The Alaska Railroad. The map site is about at the midpoint of the occurrences, in the SE1/4 of sec. 29, T. 20 S., R. 10 W., of the Fairbanks Meridian. This is location E-27 of Balen (1990: OFR 34-90). The location is accurate to within 1 mile.

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

The Middle Fork Chulitna River drains an area containing porphyry, skarn, and polymetallic and epithermal vein deposits all having significant gold contents. These deposits probably are the sources of the placer gold in Middle Fork. Of six samples collected from the placer, two contained measurable gold (Balen, 1990: OFR 34-90).

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Bull River****Site type:** Occurrence**ARDF no.:** HE136**Latitude:** 63.21**Quadrangle:** HE A-5**Longitude:** 149.45**Location description and accuracy:**

This placer gold occurrence is on Bull River, a tributary of the West Fork Chulitna River. The map site is in the NW1/4 of sec. 3, T. 20 S., and R. 10 W., of the Fairbanks Meridian. Placer activity has occurred downstream from the map site to the mouth of Costello Creek. This is location E-14 of Balen (1990: OFR 34-90).

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

The Bull River drainage area includes the Chulitna mineral district (for example, HE043), whose porphyry, skarn, and vein deposits all could be sources of placer gold. The richest of four samples of unspecified material collected by balen (1990: OFR 34-90) contained 1.5 ppm gold.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): East Fork Chulitna River****Site type:** Occurrences**ARDF no.:** HE137**Latitude:** 63.19**Quadrangle:** HE A-5**Longitude:** 149.26**Location description and accuracy:**

This site represents several placer gold occurrences along the East Fork Chulitna River. The occurrences are downstream for a distance of more than 2 miles from the map site, which is in the SW1/4 of sec 10, T. 20 S., R. 9 W., of the Fairbanks Meridian. This is location D-27 of Balen (1990: OFR 34-90).

**Commodities:****Main:** Au**Other:** Sn**Ore minerals:** Cassiterite?, gold**Gangue minerals:****Geologic description:**

Placer samples taken from the East Fork Chulitna River, contain 6.7 ppm gold and 260 ppm tin (Balen, 1990: OFR 34-90). Tin granites are reported on the western side of the Chulitna Valley (for example, HE056), and similar granites are also mapped in the East Fork Chulitna drainage area (Wilson and others, 1998). These granites may be the source of both the tin (cassiterite?) and the placer gold.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Kurtak and others, 1992; Wilson and others, 1998.

**Primary reference:** (Balen, 1990 OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south head of Hardage Creek)

**Site type:** Prospect

**ARDF no.:** HE138

**Latitude:** 63.124

**Quadrangle:** HE A-5

**Longitude:** 149.315

**Location description and accuracy:**

This prospect is at an elevation of about 4,000 feet at the south head of Hardage Creek. The map site is 2.5 miles west northwest of VABM 5205 (Benbar), near the center of sec. 5, T. 21 S., R. 9 W., of the Fairbanks Meridian. Location is accurate to within 1,500 feet. This is locality 34 of Cox and others (1989).

**Commodities:**

**Main:** Au, Sb

**Other:**

**Ore minerals:** Gold, pyrite, stibnite

**Gangue minerals:** Calcite, quartz

**Geologic description:**

The rocks in the area of this prospect are Lower Cretaceous and Upper Jurassic intensely deformed and locally highly metamorphosed argillite, conglomerate, and chert (Wilson and others, 1998). The metasedimentary rocks are cut by auriferous quartz-stibnite veins.

**Alteration:**

**Age of mineralization:**

Early Cretaceous or younger.

**Deposit model:**

Simple Sb (Cox and Singer, 1986; model 27d)

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

27d

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Cox and others, 1989; Wilson and others, 1998.

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

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (west of Tsusena Creek)

**Site type:** Prospect

**ARDF no.:** HE139

**Latitude:** 63.013

**Quadrangle:** HE A-4

**Longitude:** 148.689

**Location description and accuracy:**

This prospect is at an elevation of about 4,000 feet, near the drainage divide between Tsusena and Portage creeks. The map site is about 2.2 miles south of peak 5896, in the NW1/4 of in sec. 15, T. 22 S., R. 6 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet. This is locality D6 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Ag, Cu, Sn

**Other:** Pb, W, Zn

**Ore minerals:** Cassiterite, chalcopyrite, galena, sphalerite, wolframite

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of this prospect are Upper Triassic calcareous shale, argillite, and siltstone cut by numerous dikes, sills, and plugs of altered diabase and gabbro. These rocks are overlain by Oligocene to Paleocene volcanic flows, and pyroclastic rocks, and intruded by diverse, Tertiary(?) hypabyssal plutons (Wilson and others, 1998). The deposit consists of tin- and silver-bearing quartz veins and a mineralized shear-zone. The ore minerals are cassiterite, chalcopyrite, galena, sphalerite, and wolframite. Samples of the deposit contained as much as 26.5 ounces of silver per ton, 0.55% tin, 1.2% lead, 5.4% zinc, and 0.66% copper (Balen, 1991).

**Alteration:**

**Age of mineralization:**

Early Tertiary(?).

**Deposit model:**

Sn veins (Cox and Singer, 1986; 15b)

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

15b

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

The deposit was explored in 1980-81 by detailed geological mapping and geophysical exploration, but the claims later were allowed to lapse (Balen, 1991).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Balen and others, 1991; Wilson and others, 1998.

**Primary reference:** Balen and others, 1991

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Green Spike; Firecliff****Site type:** Prospect**ARDF no.:** HE140**Latitude:** 63.100**Quadrangle:** HE A-4**Longitude:** 148.885**Location description and accuracy:**

The Green Spike prospect is at an elevation of about 4,500 feet, at the southwest head of East Fork Chulitna River. The map site is about 2.75 miles east southeast of VABM 5854 (Alf), in the northwest corner of sec. 15, T. 21 S., R. 7 W., of the Fairbanks Meridian. The accuracy of this location is within 1,000 feet. This is locality D4 of Balen (1990: OFR 34-90).

**Commodities:****Main:** Ag, Cu, Mo**Other:** Sn, Zn**Ore minerals:** Cassiterite, chalcopyrite, molybdenite, pyrite, sphalerite**Gangue minerals:** Quartz**Geologic description:**

The Green Spike prospect is at the contact between a Tertiary granitic pluton and a slightly younger (Oligocene) complex of hypabyssal felsic dikes and remnants of a rhyolite flow. Both the granite and younger complex cut Jurassic to Cretaceous metamorphosed graywacke. The deposit is in the rhyolite, and consists of quartz veins containing cassiterite, chalcopyrite, molybdenite, pyrite, and sphalerite. Samples assay 0.48% copper, 819 ppm zinc, 0.4 ounce of silver per ton, 13 ppm tin, and 25 ppm molybdenum (Balen and others, 1991). The high molybdenum-tin-silver values, the evolved intrusive host-rocks, and their younger age distinguish this deposit from the copper-gold-rich deposits on the other side of the Chulitna Valley (for example, HE043).

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

Volcanic rocks hosting the deposit are considered Oligocene (Wilson and others, 1998).

**Deposit model:**

Porphyry Sn (Cox and Singer, 1986; 20a)

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

20a

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

Surface sampling only.

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

Balen, 1990 (OFR 34-90); Balen and others, 1991; Wilson and others, 1998.

**Primary reference:** Balen and others, 1991**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s):** Unnamed (tributary to East Fork Chulitna River)

**Site type:** Occurrence

**ARDF no.:** HE141

**Latitude:** 63.17

**Quadrangle:** HE A-4

**Longitude:** 148.96

**Location description and accuracy:**

This occurrence of placer gold is on an unnamed southeast-flowing tributary of the East Fork Chulitna River. The placer extends upstream from the map site, which is in the SE1/4 of sec. 19, T. 20 S., R. 7 W., of the Fairbanks Meridian. This is location D-3 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

This tributary drains an area underlain by Lower Cretaceous or Upper Jurassic turbidites and Lower Tertiary volcanic rocks (Wilson and others, 1998). Of 13 placer samples collected the highest values were 360 ppb gold and 110 ppm tin (Balen, 1990: OFR 34-90). The source of the placer gold and tin is unknown.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

Surface workings only to date.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Caribou

**Site type:** Occurrence

**ARDF no.:** HE142

**Latitude:** 63.25

**Quadrangle:** HE B-4

**Longitude:** 148.84

**Location description and accuracy:**

This placer gold prospect on an unnamed, northeast-flowing creek that drains into the lake in Caribou Pass, at the head of Middle Fork Chulitna River. The placer deposit extends for a distance of about a mile upstream from the map site, which is in the SW1/4 of sec. 23, T. 19 S., R. 7 W., of the Fairbanks Meridian. This is location D-2 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

The drainage area of the creek containing the Caribou gold placer prospect is underlain by Cretaceous or Jurassic turbidites and Lower Tertiary volcanic rocks (Wilson and others, 1998). A single sample of the placer contained 300 ppb gold and 8 ppm tin (Balen, 1990: OFR 34-90). The source of the placer gold and the tin is unknown.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

There have only been surface workings to date.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (adjacent to Cantwell Creek)

**Site type:** Occurrence

**ARDF no.:** HE143

**Latitude:** 63.387

**Quadrangle:** HE B-4

**Longitude:** 148.934

**Location description and accuracy:**

The prospect adjoins the northwest side of Cantwell Creek approximately 1,000 feet upstream from its junction with the Jack River and about 0.6 mile southeast of Cantwell.

The site is in sec. 5, T. 18 S., R. 7 W., of the Fairbanks Meridian. The location is accurate to within 1500 feet. This is location 7 of Clark and Cobb (1972).

**Commodities:**

**Main:** Mn

**Other:**

**Ore minerals:** Rhodochrosite

**Gangue minerals:** Quartz

**Geologic description:**

The host rocks are a melange of Paleozoic and upper Mesozoic sedimentary rocks. An 8-foot-wide outcrop contains crushed and partially recrystallized rhodochrosite; other manganese minerals are present, but not identified. The deposit is probably localized along strands of the McKinley fault.

**Alteration:**

**Age of mineralization:**

Post-Mesozoic.

**Deposit model:**

Epithermal Mn (Cox and Singer, 1986; model 25g)

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

25g

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface samples contain as much as 33.35% manganese (Berg and Cobb,1967).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Warfield, 1954; Berg and Cobb, 1967; Clark and Cobb, 1972; Cobb, 1978 (OFR 78-1062).

**Primary reference:** Cobb, 1978 (OFR 78-1062)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (southwest foot of Reindeer Hills)

**Site type:** Prospect

**ARDF no.:** HE144

**Latitude:** 63.39

**Quadrangle:** HE B-4

**Longitude:** 148.84

**Location description and accuracy:**

This prospect is at an elevation of about 2,500 feet at the southwest foot of the Reindeer Hills. The map site is about a mile north of the Golden North Airport, in the N1/2 of sec. 2, T. 18 S., R. 7 W., of the Fairbanks Meridian. The accuracy of the location is within 1 mile.

**Commodities:**

**Main:** Ag, Au

**Other:**

**Ore minerals:**

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this prospect are Lower Cretaceous to Upper Jurassic metagraywacke and argillite, cut by Tertiary granite and other felsic intrusive rocks. No other information about this prospect has been made public. The closest lode prospect (HE145) is a Cu-Mo porphyry deposit.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been surface exploration only; no assays or deposit description have been made public.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (west end of Reindeer Hills)

**Site type:** Occurrence

**ARDF no.:** HE145

**Latitude:** 63.401

**Quadrangle:** HE B-4

**Longitude:** 148.866

**Location description and accuracy:**

This occurrence is at an elevation of about 2,900 feet, on the western end of the Reindeer Hills. The map site is in the NE1/4 of sec. 34, T. 17 S., R. 7 W., of the Fairbanks Meridian. The location is accurate to within 1500 feet. This is location 11 of Clark and Cobb (1972).

**Commodities:**

**Main:** Cu, Mo

**Other:**

**Ore minerals:** Chalcopyrite, molybdenite

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of this occurrence include Lower Cretaceous to Upper Jurassic, monotonous, intensely deformed and locally highly metamorphosed, turbidites, and Oligocene granitic and other felsic intrusive rocks that cut the strata. The deposit consists of chalcopyrite and molybdenite in the Oligocene intrusive rocks (Berg and Cobb, 1967).

**Alteration:**

**Age of mineralization:**

Probably Oligocene.

**Deposit model:**

Porphyry Cu-Mo(?) (Cox and Singer, 1986; 21a)

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

21a(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Berg and Cobb, 1967.

**Primary reference:** Berg and Cobb, 1967

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Windy Creek****Site type:** Prospect**ARDF no.:** HE146**Latitude:** 63.43**Quadrangle:** HE B-4**Longitude:** 148.96**Location description and accuracy:**

This placer gold prospect is on Windy Creek, a tributary to the Jack River. The area of activity extends from the mouth of Windy Creek, upstream for about 3 miles. The map site is at the upper end of the placer activity, at the center of sec. 19, T. 17 S., R. 7 W., of the Fairbanks Meridian.

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

Windy Creek drains an area underlain by the Paleocene to Late Cretaceous Cantwell Formation, and by Mesozoic metasedimentary rocks. The lode source of the placer gold is not known.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None**Site Status:** Probably inactive

**Workings/exploration:**

Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (northwest flank of Reindeer Hills)

**Site type:** Occurrence

**ARDF no.:** HE147

**Latitude:** 63.424

**Quadrangle:** HE B-4

**Longitude:** 148.861

**Location description and accuracy:**

This occurrence is at an elevation of about 2,800 feet on the northwest flank of the Reindeer Hills. The map site is in the SE1/4 of sec. 22, T. 17 S., R. 7 W., of the Fairbanks Meridian. The location is accurate to within 1500 feet. This is location 8 of Clark and Cobb (1972).

**Commodities:**

**Main:** Cu, Ni

**Other:**

**Ore minerals:**

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this occurrence are Lower Cretaceous to Upper Jurassic, monotonous, intensely deformed and locally highly metamorphosed turbidites. The occurrence consists of copper- and nickel-bearing sulfide minerals disseminated in the sedimentary rocks (Clark and Cobb, 1972).

**Alteration:**

**Age of mineralization:**

The sulfide minerals may be syngenetic with their Lower Cretaceous to Upper Jurassic sedimentary host rocks.

**Deposit model:**

Besshi massive sulfide(?) (Cox and Singer, 1986; model 24b)

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

24b(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Clark and Cobb, 1972.

**Primary reference:** Clark and Cobb, 1972

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (southeastern flank of Reindeer Hills)

**Site type:** Occurrence

**ARDF no.:** HE148

**Latitude:** 63.416

**Quadrangle:** HE B-4

**Longitude:** 148.683

**Location description and accuracy:**

This occurrence is at an elevation of about 3,600 feet, on the southeast flank of the northwest end of the Reindeer Hills. The map site is in the NW1/4 of sec. 27, T. 17 S., R. 6 W., of the Fairbanks Meridian. The location is accurate to within 1500 feet. This is location 10 of Clark and Cobb (1972).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:**

**Gangue minerals:**

**Geologic description:**

The area of this occurrence is underlain by a Cretaceous melange comprising tectonic blocks of Paleozoic and upper Mesozoic cherty tuff, chert, argillite, and fine-grained volcanic sandstone, in a matrix of argillite, slate, shale, and graywacke (Wilson and others, 1998). The deposit is described only as a gold-rich occurrence (Berg and Cobb, 1967).

**Alteration:**

**Age of mineralization:**

Cretaceous or younger, mineralization is hosted in Cretaceous metasediments.

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There are surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Berg and Cobb, 1967; Wilson and others, 1998.

**Primary reference:** Berg and Cobb, 1967

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (north of upper Schist Creek)

**Site type:** Occurrence

**ARDF no.:** HE149

**Latitude:** 63.472

**Quadrangle:** HE B-4

**Longitude:** 148.614

**Location description and accuracy:**

This occurrence is at an elevation of about 4,500 feet, on a north-south ridge north of, and perpendicular to, upper Schist Creek. The map site is in the NW1/4 of sec. 1, T. 17 S., R. 6 W., of the Fairbanks Meridian. The location is accurate to within 1500 feet. This is location 9 of Clark and Cobb (1972).

**Commodities:**

**Main:** Ag, Cu, Mo

**Other:**

**Ore minerals:**

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this occurrence are the Paleocene Cantwell Formation which consists of terrigenous sedimentary rocks, including a few thin coal beds, and Eocene-Oligocene granitic plutons that intrude the Cantwell (Wilson and others, 1998). The occurrence consists of unspecified copper, molybdenum and silver minerals in the granitic rocks (Clark and Cobb, 1972).

**Alteration:**

**Age of mineralization:**

Probably Eocene-Oligocene.

**Deposit model:**

Porphyry Cu-Mo(?) (Cox and Singer, 1986; 21a)

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

21a(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been surface exploration only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Clark and Cobb, 1972; Wilson and others, 1998.

**Primary reference:** Clark and Cobb, 1972

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (southwest of Pyramid Peak)

**Site type:** Prospect

**ARDF no.:** HE150

**Latitude:** 63.433

**Quadrangle:** HE B-3

**Longitude:** 148.371

**Location description and accuracy:**

This prospect is at an elevation of about 4,400 feet, approximately 1.2 mile southwest of Pyramid Peak. The map site is in the NW1/4 of sec. 20, T. 17 S., R. 4 W., of the Fairbanks Meridian. The location is accurate to within 1500 feet. This is location 24 of Cox and others (1989).

**Commodities:**

**Main:** Au, Cu

**Other:**

**Ore minerals:**

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this prospect are Upper Triassic shale and siltstone, cut by Lower Tertiary granite. The deposit is described as a gold- and copper-bearing polymetallic vein (Cox and others, 1989).

**Alteration:**

**Age of mineralization:**

Probably Early Tertiary.

**Deposit model:**

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

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

22c

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been surface exploration only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Cox and others, 1989.

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

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (southwest of Pyramid Peak)

**Site type:** Occurrence

**ARDF no.:** HE151

**Latitude:** 63.421

**Quadrangle:** HE B-3

**Longitude:** 148.394

**Location description and accuracy:**

The prospect is at an elevation of about 4,100 feet, about two miles southwest of the summit of Pyramid Peak. The map site is in the SW1/4 of sec. 19, T. 17 S., R. 4 W., of the Fairbanks Meridian. The location is accurate to within 1,500 feet.

**Commodities:**

**Main:** Cu, Zn

**Other:**

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

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this prospect are Upper Triassic, generally thin-bedded, commonly cross-bedded, carbonaceous shale, argillite, sandstone, and siltstone. The strata are cut by numerous dikes, sills, and plugs of altered diabase and gabbro, and by Upper Cretaceous?-Lower Tertiary granites (Wilson and others, 1998). The prospect consists of pyrite, chalcopyrite, and sphalerite disseminated in the bedded rocks.

**Alteration:**

**Age of mineralization:**

The sulfide minerals probably are syngenetic with their Upper Triassic host rocks.

**Deposit model:**

Besshi massive sulfide (Cox and Singer, 1986; model 24b)

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

24b

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface exploration only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Cox and others, 1989; Wilson and others, 1998.

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

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (southwest of Pyramid Peak)

**Site type:** Prospect

**ARDF no.:** HE152

**Latitude:** 63.39

**Quadrangle:** HE B-3

**Longitude:** 148.41

**Location description and accuracy:**

This placer gold prospect is on an unnamed south-flowing tributary to the Nenana River, about a mile downstream from Wells Creek. Placer activity has occurred from the mouth of the tributary, upstream for an unknown distance. The map site is in the SE1/4 of sec. 36, T. 17 S., R. 5 W., of the Fairbanks Meridian.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

The area of this placer prospect is underlain by Upper Triassic calcareous shale and siltstone, cut by dikes, sills, and plugs of altered diabase and gabbro (Wilson and others, 1998). These rocks are intruded by Lower Tertiary granite approximately 0.5 mile north of the prospect. The drainage basin contains two lode prospects (HE150 and HE151) as potential sources of placer gold.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Probably inactive

**Workings/exploration:**  
Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

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

**Site type:** Prospect

**ARDF no.:** HE153

**Latitude:** 63.39

**Quadrangle:** HE B-3

**Longitude:** 148.37

**Location description and accuracy:**

Placer gold occurs along Wells Creek from its mouth, upstream to the map site, which is in the NW1/4 of sec. 5, T. 18 S., R. 4 W., of the Fairbanks Meridian. The location is accurate to within 1 mile.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Wells Creek drainage basin is underlain by Upper Triassic argillite, sandstone, and siltstone; by dikes, sills, and plugs of altered diabase and gabbro; and by Lower Tertiary granite (Wilson and others, 1998). The source of placer gold on Wells Creek is unknown.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Probably inactive

**Workings/exploration:**

There are only surface workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Wilson and others, 1998.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Seattle Creek****Site type:** Prospect**ARDF no.:** HE154**Latitude:** 63.32**Quadrangle:** HE B-3**Longitude:** 148.26**Location description and accuracy:**

This placer gold prospect is on Seattle Creek, a northeast-flowing tributary of the Nenana River between Stickwan and Lily creeks. The map site is in the NE1/4 of sec.35, T. 18 S., R. 4 W., of the Fairbanks Meridian. Easy access is provided from the Denali Highway, which crosses Seattle Creek. Placer workings below the highway are occasionally referred to as Lower Seattle Creek.

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

Seattle Creek drains an area of faulted Mesozoic metasedimentary rocks, and Tertiary intrusive and extrusive rocks. The lode source for the placer gold is not known.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.**Site Status:** Active?

**Workings/exploration:**

Surface only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (west of upper Butte Creek)

**Site type:** Prospect

**ARDF no.:** HE155

**Latitude:** 63.15

**Quadrangle:** HE A-3

**Longitude:** 148.04

**Location description and accuracy:**

This prospect is at an elevation of about 4,200 feet, near the head of an unnamed, south-east-flowing tributary to upper Battle Creek. The map site is just north of the center of sec. 25, T. 20 S., R. 3 W., of the Fairbanks Meridian. The location is accurate to within one mile.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Arsenopyrite, pyrite

**Gangue minerals:** Chlorite, quartz, sericite

**Geologic description:**

The country rock at this prospect is Jurassic or Cretaceous metagraywacke and argillite. The deposit consists of quartz-chlorite-sericite veins that contain arsenopyrite and pyrite. Samples of the vein assay 10 to 100 ppb gold (Anonymous, 1997).

**Alteration:**

Phyllic.

**Age of mineralization:**

Jurassic or younger.

**Deposit model:**

Low-sulfide Au-quartz veins (Cox and Singer, 1986; model 36a)

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

36a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Seven drill holes were completed at the prospect in 1991 (Anonymous, 1997).

**Production notes:**

**Reserves:**

**Additional comments:**

Drill core, logs, and assays from this prospect are available at the Alaska Materials Center.

**References:**

Anonymous, 1997.

**Primary reference:** Anonymous, 1997

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Upper Butte Creek****Site type:** Occurrences**ARDF no.:** HE156**Latitude:** 63.06**Quadrangle:** HE A-2**Longitude:** 147.92**Location description and accuracy:**

Placer gold occurs along upper Butte Creek, downstream from the mouth of Gold Creek to the map site, which is in the SW1/4 of sec. 27, T. 21 S., R. 2 W., of the Fairbanks Meridian. This is location B-10 of Balen (1990: 34-90).

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

Upper Butte Creek drains an area underlain by metasedimentary and intrusive rocks, presumably of Mesozoic or Tertiary age. The placer gold was probably derived from the erosion of auriferous lodes, such as those at HE156, HE172, and HE173. Samples collected by the BLM all contained small amounts of gold (Balen, 1990 OFR 90-34).

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.**Site Status:** Active?

**Workings/exploration:**

Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (northwest of the head of Watana River)

**Site type:** Occurrence

**ARDF no.:** HE157

**Latitude:** 63.028

**Quadrangle:** HE A-2

**Longitude:** 147.950

**Location description and accuracy:**

This occurrence is at an elevation of about 3,200 feet, northwest of the head of Watana River. The map site is about 1.7 miles southwest of the 'elbow' of Butte Creek, in the NW1/4 of sec. 9, T. 22 S., R. 2 W., of the Fairbanks Meridian. The location is accurate to within 2500 feet. This is location B11 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:**

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this occurrence are Upper Jurassic or Lower Cretaceous metagraywacke cut by Lower Tertiary? granite. The occurrence is described as copper-rich. Samples contain 38 ppm copper, 12 ppm lead, and 71 ppm zinc (Balen, 1990: OFR 34-90).

**Alteration:**

**Age of mineralization:**

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface samples only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Sweet Glory

**Site type:** Occurrences

**ARDF no.:** HE158

**Latitude:** 63.01

**Quadrangle:** HE A-2

**Longitude:** 147.81

**Location description and accuracy:**

The Sweet Glory placer gold claims are along an unnamed, north-northwest flowing tributary to Butte Creek. The tributary joins Butte Creek about 1.5 miles below where Butte Creek changes direction from south to east. The area of placer activity extends upstream from the mouth of the tributary to the map site, which is in the NE1/4 of sec. 18, T. 22 S., R. 1 W., of the Fairbanks Meridian. This is location B-12 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

The drainage area feeding the Sweet Glory gold placers is underlain by two geological units, each of which is a potential source of gold. The lower part of the drainage is Cretaceous to Jurassic interbedded conglomerate and sandstone, and flows and dikes of andesitic to latitic feldspar porphyry. The upper part of the drainage is greenstone.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

There has only been surface exploration.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (at Peak 5532)

**Site type:** Prospect

**ARDF no.:** HE159

**Latitude:** 63.009

**Quadrangle:** HE A-2

**Longitude:** 147.733

**Location description and accuracy:**

This prospect is on Peak 5532, at the west-central edge of sec. 15, T. 22 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet. This is location B-13 of Balen (1990: 34-90).

**Commodities:**

**Main:** Cu, Pt, Pd

**Other:** Cr, Ni

**Ore minerals:** Chalcopyrite, chromite, pentlandite, pyrrhotite

**Gangue minerals:**

**Geologic description:**

The country rocks at this prospect are Middle or Upper Triassic Nikolai Greenstone, and probably cogenetic, ultramafic dikes that cut the greenstone. The deposit consists of disseminations and pods of chalcopyrite, chromite, pentlandite, and pyrrhotite in within the ultramafic intrusive rocks. Samples contain as much as 0.41% chromium, 0.15% copper, 0.11% nickel, 28 ppb palladium, and 140 ppb platinum (Balen and others, 1991).

**Alteration:**

**Age of mineralization:**

The ore minerals probably are magmatic segregations in the Triassic ultramafic hostrocks.

**Deposit model:**

Cu-Ni-PGE (Cox and Singer, 1986; model 5)

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

5

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

There has only been surface sampling to date.

**Production notes:**

**Reserves:**

**Additional comments:**

This deposit was discovered in the 1980s, during a regional geologic reconnaissance by the Bureau of Land Management (Balen, 1990: OFR 34-90).

**References:**

Balen, 1990 (OFR 34-90); Balen and others, 1991.

**Primary reference:** Balen and others, 1991

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south of VABM Way)

**Site type:** Occurrence

**ARDF no.:** HE160

**Latitude:** 63.006

**Quadrangle:** HE A-2

**Longitude:** 147.644

**Location description and accuracy:**

This occurrence is at an elevation of about 4,000 feet, 1.5 miles south of VABM 5896 (Way). The map site is in the SE1/4 of sec. 13, T. 22 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet. This is location 38 of Clark and Cobb (1972).

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite, pyrite

**Gangue minerals:**

**Geologic description:**

The country rocks in the area of this occurrence consist of a 2,000-meter-thick sequence of Lower Permian? and Pennsylvanian, massive volcanic flows, breccias, and subordinate volcanoclastic rocks, all largely andesitic in composition (Wilson and others, 1998). The occurrence consists of pyrite and chalcopyrite disseminated in the volcanic rocks.

**Alteration:**

**Age of mineralization:**

The sulfide minerals probably are syngenetic with their Lower Permian - Pennsylvanian host rocks.

**Deposit model:**

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

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

24a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Kaufman, 1964 (GR4); Berg and Cobb, 1967; Clark and Cobb, 1972; Wilson and others, 1998.

**Primary reference:** Kaufman, 1964

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Sure Shot****Site type:** Prospect**ARDF no.:** HE161**Latitude:** 63.011**Quadrangle:** HE A-2**Longitude:** 147.639**Location description and accuracy:**

The Sure Shot prospect is at an elevation of about 3,900 feet, 1.5 miles south of VABM 5896 (Way). The map site is in the NW1/4 of sec. 18, T. 22 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 1,000 feet. This is location 39 of Clark and Cobb (1972), location B-14 of Balen (1990: OFR 34-90).

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

The country rocks in the area of the Sure Shot prospect consist of a 2,000-meter-thick sequence of Lower Permian? and Pennsylvanian, volcanic rocks, massive volcanic flows, breccias, and subordinate volcanoclastic rocks, all largely andesitic in composition (Wilson and others, 1998). The prospect consists of pyrite and chalcopyrite disseminated in the volcanic rocks. Samples contain 4 ppb gold and 153 ppm copper (Balen, 1990 OFR 34-90).

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

The sulfide minerals probably are syngenetic with their Lower Permian - Pennsylvanian host rocks.

**Deposit model:**

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

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

24a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface samples only. Samples contain 4 ppb gold and 153 ppm copper (Balén, 1990 OFR 34-90).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Kaufman, 1964 (GR4); Berg and Cobb, 1967; Clark and Cobb, 1972; Balén, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Kaufman, 1964

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (mountains south of lower Butte Creek)

**Site type:** Occurrence

**ARDF no.:** HE162

**Latitude:** 63.017

**Quadrangle:** HE A-2

**Longitude:** 147.641

**Location description and accuracy:**

This occurrence is located at an elevation of approximately 4,300 feet in the mountains south of lower Butte Creek, and 0.75 mile south of VABM 5896 (Way). The map site is near the south and of the west boundary of sec. 7, T. 22 S., on the boundary of R. 1 W., and R. 1 E., of the Fairbanks Meridian. The location is accurate to within 1,000 feet.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite, pyrite

**Gangue minerals:**

**Geologic description:**

The area of this occurrence is underlain by a 2,00-meter-thick sequence of Lower Permian? and Pennsylvanian, massive volcanic flows, breccias, and subordinate volcanoclastic rocks, all largely andesitic in composition (Wilson and others, 1998). The occurrence consists of pyrite and chalcopyrite disseminated in the volcanic rocks.

**Alteration:**

**Age of mineralization:**

The sulfide minerals probably are syngenetic with their Lower Permian? and Pennsylvanian host rocks.

**Deposit model:**

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

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

24a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Saunders, 1961; Kaufman, 1964 (GR4); Berg and Cobb, 1967; Clark and Cobb, 1972;  
Wilson and others, 1998.

**Primary reference:** Saunders, 1961

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (near VABM Way)

**Site type:** Occurrence

**ARDF no.:** HE163

**Latitude:** 63.033

**Quadrangle:** HE A-2

**Longitude:** 147.620

**Location description and accuracy:**

The site is located at an elevation of approximately 4,500 feet, 0.5 mile northeast of VABM 5896 (Way). The site is in the SE1/4 of sec. 6, T. 22 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 1000 feet. This is location 40 of Clark and Cobb (1972).

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite, malachite, pyrite

**Gangue minerals:**

**Geologic description:**

This occurrence is close to a thrust separating a slice of Lower Permian? and Pennsylvanian andesitic volcanic rocks from Middle Triassic to Upper Pennsylvanian metasedimentary rocks. Numerous large diabasic and gabbroic dikes and sills occur throughout the area (Wilson and others, 1998). The occurrence consists of pyrite and chalcopyrite disseminated in the volcanic rocks, and of secondary malachite.

**Alteration:**

Oxidation of copper mineral(s) to malachite.

**Age of mineralization:**

Sulfide minerals probably are syngenetic with their Triassic-Upper Pennsylvanian host rocks.

**Deposit model:**

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

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

24a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Saunders, 1961; Kaufman, 1964 (GR4); Berg and Cobb, 1967; Clark and Cobb, 1972;  
Wilson and others, 1998.

**Primary reference:** Kaufman, 1964

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (near VABM Way)

**Site type:** Occurrence

**ARDF no.:** HE164

**Latitude:** 63.034

**Quadrangle:** HE A-2

**Longitude:** 147.640

**Location description and accuracy:**

This occurrence is at an elevation of approximately 5,000 feet, 0.6 mile NW of VABM Way and about 2 miles south of Butte Creek. The site is in sec. 6, T. 22 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 1000 feet. This is location 37 of Clark and Cobb (1972).

**Commodities:**

**Main:** Cu, Fe

**Other:**

**Ore minerals:** Azurite, bornite, chalcopyrite, magnetite, malachite, pyrite.

**Gangue minerals:** Calcite, quartz

**Geologic description:**

This occurrence is hosted in Middle Triassic to Upper Pennsylvanian metasedimentary rocks, cut by numerous diabasic and gabbroic dikes and sills (Wilson and others, 1998). The deposit consists of copper sulfides disseminated in the mafic units, and of magnetite along fault zones separating limestone and argillite. The sulfide minerals are bornite, chalcopyrite, and pyrite. Malachite and azurite occur in cross-cutting carbonate veins. Some of the sulfide minerals probably are syngenetic with emplacement of their Upper Paleozoic or Triassic mafic hostrocks. The bornite may represent subsequent supergene enrichment.

**Alteration:**

**Age of mineralization:**

Some of the sulfide minerals probably are syngenetic with their Upper Paleozoic Triassic mafic host rocks. The bornite may represent subsequent supergene enrichment.

**Deposit model:**

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

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

24a

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

Surface workings and exploration only.

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

Moffit, 1912; Moffit, 1914; Moffit, 1915; Saunders, 1961; Kaufman, 1964 (GR4); Berg and Cobb, 1967; Clark and Cobb, 1972; Wilson and others, 1998.

**Primary reference:** Clark and Cobb, 1972**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s):** Unnamed (south of valley of lower Butte Creek))

**Site type:** Occurrence

**ARDF no.:** HE165

**Latitude:** 63.039

**Quadrangle:** HE A-2

**Longitude:** 147.630

**Location description and accuracy:**

This occurrence is at an elevation of approximately 3,800 feet in the mountains south of the valley of lower Butte Creek. The map site is 0.75 miles north of VABM 5896 (Way), in the NW1/4 of sec. 6, T. 22 S., R. 1 E., of the Fairbanks Meridian. The location is accurate to within 1,000 feet. This is location 41 of Clark and Cobb (1972).

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite, malachite, pyrite

**Gangue minerals:**

**Geologic description:**

The area of this occurrence is underlain by Middle Triassic to Upper Pennsylvanian interbedded black argillite and volcanic sandstone. The upper part of sequence contains about 100 of radiolarian chert. The sequence is cut by numerous diabasic and gabbroic dikes (Wilson and others, 1998). The occurrence consists of pyrite and chalcopyrite disseminated in the bedded rocks, and of secondary malachite.

**Alteration:**

Oxidation of copper minerals.

**Age of mineralization:**

The sulfide minerals probably are syngenetic with their Triassic-Upper Pennsylvanian host rocks.

**Deposit model:**

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

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

24a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Saunders, 1961; Kaufman, 1964 (GR4); Berg and Cobb, 1967; Clark and Cobb, 1972;  
Wilson and others, 1998.

**Primary reference:** Saunders, 1961

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south of lower Butte Creek)

**Site type:** Occurrence

**ARDF no.:** HE166

**Latitude:** 63.041

**Quadrangle:** HE A-2

**Longitude:** 147.671

**Location description and accuracy:**

This occurrence is at an elevation of about 4,100 feet on the south wall of the valley of lower Butte Creek. The map site is about 1.2 miles northwest of VABM 5896 (Way), in the NW1/4 of sec. 1, T. 22 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 1000 feet. This is location 36 of Clark and Cobb (1972).

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite, pyrite

**Gangue minerals:**

**Geologic description:**

The area of this occurrence is underlain by Middle or Upper Triassic Nikoli Greenstone, Middle Triassic to Upper Pennsylvanian metasedimentary rocks, and numerous diabasic and gabbroic dikes and sills (Wilson and others, 1998). The occurrence is near a thrust fault that separates the two bedded units, and consists of pyrite and chalcopyrite disseminated in the metasedimentary rocks (Saunders, 1961).

**Alteration:**

**Age of mineralization:**

The sulfide minerals probably are syngenetic with their Triassic-Upper Pennsylvanian host rocks.

**Deposit model:**

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

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

24a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Saunders, 1961; Kaufman, 1964 (GR4); Berg and Cobb, 1967; Clark and Cobb, 1972.

**Primary reference:** Saunders, 1961

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s): Nelson Discovery No. 2****Site type:** Occurrences**ARDF no.:** HE167**Latitude:** 63.05**Quadrangle:** HE A-2**Longitude:** 147.65**Location description and accuracy:**

Placer gold occurs along an unnamed, north-flowing tributary to Butte Creek. The occurrences extend for about a mile upstream from the map site, which is just north of the center of sec. 36, T. 21 S., R. 1 W., of the Fairbanks Meridian. This site is location B-3 of Balen (1990: OFR 34-90). The location is accurate to within 1 mile.

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

This creek drains an area underlain by thrust slices of greenstone and turbidite. In addition to the gold there are reports of palladium in this placer (Balen, 1990: OFR 34-90). The source of the placer gold is unknown. The source of the palladium might be ultramafic rocks, such as those at HE159.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

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

**Site type:** Prospects

**ARDF no.:** HE168

**Latitude:** 63.06

**Quadrangle:** HE A-2

**Longitude:** 147.63

**Location description and accuracy:**

These placer gold prospects are on Butte Creek, a tributary to the Susitna River. The area of placer activity extends from the mouth of Butte Creek, upstream for about 4 miles. The map site is in the SW1/4 of sec. 30, T. 21 S., R. 1 E., of the Fairbanks Meridian. This is location B-2 of Balen (1990; 34-90).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

The north side of the Butte Creek drainage area is underlain by metasedimentary rocks intruded by Tertiary or Upper Cretaceous quartz diorite. The area contains several gold-bearing lode (for example, HE172) and placer (for example, HE174) deposits that are likely sources for much of the gold in Butte Creek. Tributaries from the south also contain placer gold (HE167) and constitute another potential source area.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Probably inactive

**Workings/exploration:**  
Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Balen, 1990 (OFR 34-90); Balen and others, 1991.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Gold Creek; Eagle Bluff****Site type:** Prospect**ARDF no.:** HE169**Latitude:** 63.102**Quadrangle:** HE A-2**Longitude:** 147.831**Location description and accuracy:**

The Gold Creek (Eagle Bluff) prospect consists of lode claims adjacent to Gold Creek, a tributary to Butte Creek. The map site is at an elevation of about 3,700 feet, on the north valley wall of Gold Creek. It is in the northwest corner of sec. 18, T. 21 S., R. 1 W., of the Fairbanks Meridian. The accuracy of the location is within 1,500 feet. This is location B-9 of Balen (1990: 34-90), and location 159 of Kurtak and others (1992).

**Commodities:****Main:** Ag, Au**Other:****Ore minerals:** Arsenopyrite(?), chalcopyrite, molybdenite**Gangue minerals:** Quartz**Geologic description:**

The country rocks in the area of this prospect are Eocene(?) granodiorite and Lower Cretaceous to Upper Jurassic metamorphosed turbidites (Wilson and others, 1998). The prospect has been described as a silicified fault zone containing chalcopyrite, molybdenite, and arsenopyrite(?). Rock chip samples contain 0.25 ounce of gold per ton, 0.57% copper, 71 ppm molybdenum, and high values of bismuth and silver (Balen, 1991).

**Alteration:**

Alteration consists of narrow phyllic and silicified zones.

**Age of mineralization:**

Early Tertiary(?).

**Deposit model:**

Polymetallic veins or low-sulfide Au-quartz veins (Cox and Singer, 1986; model 22c, 36a)

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

22c, 36a

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**  
Surface exploration only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Balen and others, 1991; Kurtak and others, 1992; Wilson and others, 1998.

**Primary reference:** Balen and others, 1991

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Gold Creek****Site type:** Occurrence**ARDF no.:** HE170**Latitude:** 63.10**Quadrangle:** HE A-2**Longitude:** 147.81**Location description and accuracy:**

Placer claims are located along Gold Creek, a tributary to Butte Creek. The area of activity extends from Section 18, 2 miles downstream into Section 13. The map site is at the north boundary of sec. 18, T. 21 S., R. 2 W., of the Fairbanks Meridian. This is location 68 of Clark and Cobb (1972); and location B-8 of Balen (1990: 34-90).

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

Gold Creek drains a basin underlain by Lower Tertiary granodiorite and granite that intrudes Lower Cretaceous and Upper Jurassic metagraywacke (Wilson and others, 1998). Placer gold was first discovered in 1903. The sources of the gold probably are lode deposits, such as those at Gold Hill (HE172) and Gold Creek East (HE169).

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Active?

**Workings/exploration:**

Surface placer workings dating from 1903.

**Production notes:**

**Reserves:**

**Additional comments:**

Discovered at the same time as Wickersham Creek (HE174) in 1903.

**References:**

Moffit, 1912; Cobb, 1973 (B 1374); Clark and Cobb, 1972; Balen, 1990 (OFR 34-90);  
Wilson and others, 1998.

**Primary reference:** Moffit, 1912

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (near summit of Gold Hill)

**Site type:** Prospect

**ARDF no.:** HE171

**Latitude:** 63.096

**Quadrangle:** HE A-2

**Longitude:** 147.750

**Location description and accuracy:**

This prospect is at an elevation of about 4,400 feet, about 0.5 mile southwest of the summit of Gold Hill, the first ridge northwest of the junction of Butte and Wickersham creeks. The site is in sec. 16, T. 21 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet.

**Commodities:**

**Main:** Mo

**Other:**

**Ore minerals:** Molybdenite

**Gangue minerals:** Quartz

**Geologic description:**

The country rocks in the area of this prospect are deformed and metamorphosed Lower Cretaceous and Upper Jurassic turbidites (Wilson and others, 1998) cut by Lower Tertiary to Upper Cretaceous(?) diorite and quartz monzonite (Smith and others, 1988). The deposit is in metasedimentary and altered intrusive rocks, and consists of widely-spaced zones of disseminated molybdenite. This deposit probably is related to other porphyry-type deposits in the Gold Hill area (HE172 and HE173).

**Alteration:**

**Age of mineralization:**

Probably Late Cretaceous or younger.

**Deposit model:**

Porphyry Mo(?) (Cox and Singer, 1986; model 21b)

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

21b?

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

This prospect has been explored by soil sampling and trenching. At least two shallow drill holes totaling 220 feet, were completed in the 1970's (D.L. Stevens, oral communication, 1999). Geophysical exploration has included a regional aeromagnetic survey over the prospect and surrounding area, as well as ground magnetics, IP, and EM.

**Production notes:**

**Reserves:**

**Additional comments:**

See also HE172 and HE173.

**References:**

Smith and others, 1975 (OFR 69); Balen, 1990 (OFR 34-90); Balen and others, 1991; Kurtak and others, 1992; Wilson and others, 1998.

**Primary reference:** Balen and others, 1991

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Gold Hill, Su

**Site type:** Prospect

**ARDF no.:** HE172

**Latitude:** 63.100

**Quadrangle:** HE A-2

**Longitude:** 147.737

**Location description and accuracy:**

The Gold Hill (Su) prospect is at an elevation of about 4,800 feet, at the crest of the ridge northwest of the junction of Wickersham Creek and Butte Creek. The map site is near the north end of the boundary between secs. 15 and 16, T. 21 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet. This is locality 8 of Smith and others (1975: OFR 69); locality B7 of Balen (1990: OFR 34-90).

**Commodities:**

**Main:** Au, Cu

**Other:** Mo

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

**Gangue minerals:** Quartz, sericite

**Geologic description:**

The area of this prospect is underlain by intensely deformed and metamorphosed Lower Cretaceous and Upper Jurassic flysch (Wilson and others, 1998), cut by altered Lower Tertiary to Upper Cretaceous(?) diorite and quartz monzonite (Smith and others, 1988). The deposit consists of widely-spaced zones of sulfide minerals disseminated in the metasedimentary and altered intrusive rocks, and of stockwork quartz veinlets that carry molybdenite, chalcopyrite, pyrite, and sericite. Samples containing as much as 0.39 ounce of gold per ton have been reported (Balen and others, 1991).

**Alteration:**

Phyllic and propylitic.

**Age of mineralization:**

Probably Late Cretaceous or younger.

**Deposit model:**

Porphyry Cu-Au (Cox and Singer, 1986; model 20c)

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

20c

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

Exploration has included soil sampling and trenching over a broad area. At least 2 shallow drill holes totalling 220 feet, were completed in the 1970s. Since then, at least 30 holes have been drilled on the prospect (D.L. Stevens, oral communication, 1999). Geophysical exploration has included a regional aeromagnetic survey over the prospect and surrounding area, as well as ground magnetics, IP, and EM. Samples containing as much as 0.39 ounce of gold per ton have been reported (Balén and others, 1991).

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

Smith and others, 1975 (OFR 69); Balén, 1990 (OFR 34-90); Balén and others, 1991; Kurtak and others, 1992; Wilson and others, 1998.

**Primary reference:** Balén and others, 1991**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s): Wickersham****Site type:** Occurrence**ARDF no.:** HE173**Latitude:** 63.110**Quadrangle:** HE A-2**Longitude:** 147.702**Location description and accuracy:**

This occurrence is at an elevation of about 3,600 feet on the west bank of an unnamed, southeast-flowing tributary of Wickersham Creek. It is about 6 miles west of the Denali Highway bridge over the Susitna River. The site is in the NW1/4 of sec. 11, T. 21 S., R. 1 W., of the Fairbanks Meridian. The location is accurate to within 1,000 feet. This is locality 13 of Smith and others (1975: OFR 69).

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

This occurrence consists of chalcopyrite disseminations in an altered intrusive rock that cuts metamorphosed Lower Cretaceous and Upper Jurassic flysch (Wilson and others, 1998). The intrusive rock probably is an apophysis of the quartz monzonite stock at the Gold Hill prospect (HE172). The stock is correlated with the Tertiary (63 and 55 Ma) Butte Lake pluton (Smith and others, 1988).

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

Tertiary, assuming that the deposit is indigenous to the intrusive host rock.

**Deposit model:**

Porphyry Cu-Au (Cox and Singer, 1986; model 20c)

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

20c

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface exploration only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Smith and others, 1975; Wilson and others, 1998.

**Primary reference:** Smith and others, 1975

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Wickersham Creek****Site type:** Prospect**ARDF no.:** HE174**Latitude:** 63.11**Quadrangle:** HE A-2**Longitude:** 147.69**Location description and accuracy:**

This gold placer prospect is on Wickersham Creek about 3 miles upstream from its junction with Butte Creek. The map site is at the midpoint of a mile-long interval of placer activity, in sec. 11, T. 21 S., R. 1 W., of the Fairbanks Meridian. This is location 69 of Clark and Cobb (1972); and location B-6 of Balen (1990: 34-90).

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

Wickersham Creek drains an area of Lower Tertiary granodiorite and granite that cuts Lower Cretaceous and Upper Jurassic deformed and metamorphosed flysch (Wilson and others, 1998). The placer gold was probably derived from the erosion of nearby lode deposits (HE171, HE172, and HE173).

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Active?

**Workings/exploration:**

Surface workings only.

**Production notes:**

Placer gold discovered in 1903, apparently in too small quantity to mine.

**Reserves:**

**Additional comments:**

**References:**

Moffit, 1912; Moffit, 1914; Moffit, 1915; Clark and Cobb, 1972; Cobb, 1973 (B 1374);  
Cobb, 1978 (OFR 78-1062); Balen, 1990 (OFR 34-90); Wilson and others, 1998.

**Primary reference:** Moffit, 1914

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Nay Nadeli

**Site type:** Mine

**ARDF no.:** HE175

**Latitude:** 63.12

**Quadrangle:** HE A-2

**Longitude:** 147.67

**Location description and accuracy:**

The Nay Nadeli placer gold deposit is on a west-flowing tributary of upper Wickersham Creek. The area of placer activity extends from the mouth of the tributary, upstream to the map site, which is in the SW1/4 of sec. 1, T. 21 S., R. 1 W., of the Fairbanks Meridian. This is location B-5 of Balen (1990: 34-90).

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

This tributary of Wickersham Creek drains an area underlain by Tertiary or Cretaceous granodiorite, quartz monzonite and granite, and by Cretaceous or Jurassic turbidites (Wilson and others, 1998). The placer gold was probably derived from the erosion of auriferous lodes, such as those at HE172 and HE178. Placer samples collected by the BLM contained 0.0053 ounce of gold per cubic yard (Kurtak and others, 1992).

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Probably inactive

**Workings/exploration:**

Surface workings date from the early 1900s.

**Production notes:**

There was very small production of gold in the early 1900s.

**Reserves:**

**Additional comments:**

**References:**

Moffit, 1912; Moffit, 1914; Moffit, 1915; Cobb, 1973 (B 1374); Clark and Cobb, 1972; Balen, 1990 (OFR 34-90); Kurtak and others, 1992; Wilson and others, 1998.

**Primary reference:** Moffit, 1914

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Tammany Creek****Site type:** Occurrence**ARDF no.:** HE176**Latitude:** 63.09**Quadrangle:** HE A-2**Longitude:** 147.66**Location description and accuracy:**

This placer gold occurrence is on a south-flowing tributary to lower Wickersham Creek, just above its junction with Butte Creek. The tributary, locally called Tammany Creek, is not named on the topographic map. The area of activity extends about 2 miles downstream from the map site, which is in the SE1/4 of sec. 13, T. 21 S., R. 1 W., of the Fairbanks Meridian. This is location B-4 of Balen (1990: 34-90).

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

The drainage basin of Tammany Creek contains Tertiary or Cretaceous granodiorite and Cretaceous or Jurassic turbidites (Wilson and others, 1998). The placer gold was probably derived from auriferous lodes, such as those at HE172 and HE178.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Active?

**Workings/exploration:**

Surface placer workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90); Kurtak and others, 1992; Wilson and others, 1998.

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Indiana Pup****Site type:** Prospect**ARDF no.:** HE177**Latitude:** 63.14**Quadrangle:** HE A-2**Longitude:** 147.55**Location description and accuracy:**

This placer prospect is on Indiana Pup, an informally-named, east-flowing, a tributary of the Susitna River about 2 miles north of the Susitna River bridge. The area of placer activity extends an unknown distance both up stream and down stream from the map site, which is in the E1/2 of sec. 33, T. 20 S., R. 1 E., of the Fairbanks Meridian.

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

The drainage basin of this creek includes Mesozoic metagraywacke and Quaternary surficial deposits, both of which are potential sources of alluvial gold.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None**Site Status:** Probably inactive

**Workings/exploration:**

There are only minor surface workings at this site.

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

This small placer probably is of limited significance compared to other placers in the immediate area.

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Wickersham Discovery****Site type:** Occurrence**ARDF no.:** HE178**Latitude:** 63.10**Quadrangle:** HE A-2**Longitude:** 147.58**Location description and accuracy:**

This placer gold occurrence is on an unnamed, south-flowing creek that terminates near the northwest corner of Snodgrass Lake. The area of placer activity extends for about a mile on either side of the map site, which is in the SW1/4 of sec. 9, T. 21 S., R. 1 E., of the Fairbanks Meridian. This is location B-1 of Balen (1990: 34-90). The location is accurate to within 1 mile.

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

The drainage area of this creek is underlain by Lower Cretaceous or Upper Jurassic metamorphosed turbidite cut by Lower Tertiary granodiorite and granite (Wilson and others, 1998). These rocks locally contain gold-bearing lode deposits (for example, HE172).

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Undetermined.

**Site Status:** Active?

**Workings/exploration:**

Surface workings only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Balen, 1990 (OFR 34-90).

**Primary reference:** Balen, 1990 (OFR 34-90)

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (south of Sustina River bridge)

**Site type:** Occurrence

**ARDF no.:** HE179

**Latitude:** 63.10

**Quadrangle:** HE A-2

**Longitude:** 147.53

**Location description and accuracy:**

This placer gold occurrence is on the west bank of the Susitna River, about 0.5 mile below the Susitna River bridge. The area of placer activity may extend both upstream and downstream from the map site, which is in the NE1/4 of sec. 15, T. 21 S., R. 1 E., of the Fairbanks Meridian.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

The drainage area near this site includes Mesozoic metagraywacke and Quaternary surficial deposits, both of which are potential sources of alluvial gold.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

Minor surface placer workings.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

This record.

**Primary reference:** This record

**Reporter(s):** N. Van Wyck (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (east of Susitna Lodge airstrip)

**Site type:** Occurrence

**ARDF no.:** HE180

**Latitude:** 63.086

**Quadrangle:** HE A-1

**Longitude:** 147.447

**Location description and accuracy:**

This occurrence is at an elevation of 2,420 feet, 0.75 mile due east of the south end of the Susitna Lodge airstrip. The map site is in the NW1/4 of sec. 19, T. 21 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to within 200 feet.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Bornite, chalcocite, chalcopyrite, malachite, native copper

**Gangue minerals:** Epidote, quartz

**Geologic description:**

The area of this occurrence is underlain by the Middle or Upper Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

The deposit is in a hydrothermally altered shear zone in greenstone, and consists of quartz, epidote, chalcopyrite, and an iron carbonate mineral. Weathering produces malachite- and azurite-coated float and encrustations.

Glavinovich (1967) describes this occurrence as follows: 'Mineralized amygdaloidal andesite occurs in talus. Bornite, malachite and microscopic native copper associated with quartz pods occur in the andesite. The small quartz pods appear to have formed by replacement of the andesite. Bornite is later than the quartz and may, in part, be replacing it. Some of the strongly epidotized rock (greenstone) contains splashes of bornite, chalcocite (?) and malachite along fracture surfaces'.

**Alteration:**

Propylitic alteration of greenstone

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Glavinovich, 1967; Nokleberg and others, 1992.

**Primary reference:** Glavinovich, 1967

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Unnamed****Site type:** Occurrence**ARDF no.:** HE181**Latitude:** 63.0893**Quadrangle:** HE A-1**Longitude:** 147.4403**Location description and accuracy:**

This occurrence is at an elevation of about 3,800 feet, one mile due east of the center of the airstrip at Susitna Lodge. The map site is in the SW1/4 of sec. 18, T. 21 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to about 250 feet.

**Commodities:****Main:** Cu**Other:****Ore minerals:** Azurite, bornite, chalcocite, malachite**Gangue minerals:** Epidote, iron carbonate, quartz**Geologic description:**

The area of this occurrence is underlain by the Middle or Upper Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

The deposit is in a hydrothermally altered shear zone in greenstone and consists quartz, epidote, bornite, chalcocite, and an iron carbonate mineral. Weathering produces malachite- and azurite-coated float and encrustations.

Glavinovich (1967) described the occurrence as follows: 'Bornite, minor chalcocite and malachite occur as small discontinuous stringers in a narrow fracture zone. The fracture zone trends northeast, is about two inches wide and three feet in length. At both ends the zone narrows to a single fracture that continues along strike but is unmineralized. Gangue minerals include quartz and epidote. The paragenesis as determined in hand specimen is epidote, quartz, sulfides. The country rock is moderately altered andesite and is well jointed. Malachite coatings on joint faces are common.'

**Alteration:**

Propylitic alteration of greenstone.

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

Hydrothermally altered shear zone

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Kaufman, 1964; Glavinovich, 1967; Nokleberg and others, 1992.

**Primary reference:** Glavinovich, 1967

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** HE182

**Latitude:** 63.094

**Quadrangle:** HE A-1

**Longitude:** 147.440

**Location description and accuracy:**

This occurrence is at an elevation of about 3,650 feet, 0.7 mile due east of south end of the east lake at Susitna Lodge. The map site is in the SW1/4 of sec. 18, T. 21 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to within 500 feet.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Bornite, chalcocite

**Gangue minerals:** Quartz

**Geologic description:**

The area of this occurrence is underlain by the Middle or Upper Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

This occurrence was described by Glavinovich (1976) as follows: 'The mineralized sample was found in talus. The mineralization consists of malachite, minor chalcocite and bornite occurring in small quartz pods and stringers in an amygdaloidal andesite.'

**Alteration:**

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

Hydrothermally altered shear zone.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Glavinovich, 1967; Nokleberg and others, 1992.

**Primary reference:** Glavinovich, 1967

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (south of lower Windy Creek)

**Site type:** Occurrence

**ARDF no.:** HE183

**Latitude:** 63.1104

**Quadrangle:** HE A-1

**Longitude:** 147.4395

**Location description and accuracy:**

This occurrence is at an elevation of about 2,960 feet, about 1.75 miles north-northeast of Susitna Lodge. The map site is in the NW1/4 of sec. 7, T. 21 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to within 250 feet.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Azurite, chalcopyrite, malachite

**Gangue minerals:** Epidote, iron carbonate, quartz

**Geologic description:**

The area of this occurrence is underlain by the Middle or Upper Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

The deposit is in a hydrothermally altered shear zone in greenstone, and consists of quartz, epidote, chalcopyrite, and an iron carbonate mineral. Weathering produces malachite- and azurite-coated float and encrustations.

**Alteration:**

Propylitic alteration of greenstone.

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

Hydrothermally altered shear zone.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Saunders, 1961; Nokleberg and others, 1992.

**Primary reference:** Saunders, 1961

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Greathouse****Site type:** Prospect**ARDF no.:** HE184**Latitude:** 63.092**Quadrangle:** HE A-1**Longitude:** 147.395**Location description and accuracy:**

This prospect is at an elevation of about 5,000 feet, south of Windy Creek and about 2.6 miles east of Susitna Lodge. It is in sec.17,T. 21 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to within 500 feet. The location is best shown in Kaufman (1964 GR-4, site 3) and in Smith (1981, site 28).

**Commodities:****Main:** Cu**Other:****Ore minerals:** Bornite, CHALCOCITE, covellite, MALACHITE**Gangue minerals:** Calcite, epidote, quartz**Geologic description:**

The bedrock in the area of this prospect is the Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows, and minor interbedded volcanoclastic rocks, argillite, and radiolarian chert (Nokleberg and others, 1992).

The deposit consists of bornite, chalcocite, covellite, and malachite in a 3-foot-wide, northwest-trending shear zone. A chip sample across the zone contained 11% copper. The mineralized portion of the shear zone is less than 100 feet long, but the zone can be traced for more than 1,000 feet. Both the hanging wall and the footwall are altered basalt, and the brecciated country rock in the shear zone is strongly epidotized. A 4-foot-wide diorite dike cuts the basalt near the shear zone (Smith, 1981). Glavinovich (1967) noted that chalcocite replaces bornite, covellite replaces chalcocite, and quartz and malachite crosscut the sulfides. Several other northwest-trending shear zones occur in the area but are not known to contain any copper minerals. This prospect is in a broad belt of small copper occurrences that extends east-northeast for approximately 10 miles along the south side of Windy Creek.

**Alteration:**

The country rock has been epidotized adjacent to and along the shear zone.

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

Mineralized shear zone.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

No surface workings; chip samples across a 3-foot-wide section of the shear zone contained as much as 11% Cu (Kaufman, 1964).

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

Kaufman, 1964 (GR4); Glavinovich, 1967; Smith, 1981; Nokleberg and others, 1992.

**Primary reference:** Kaufman, 1964 (ADGGS GR 4)

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south of Windy Creek)

**Site type:** Occurrence

**ARDF no.:** HE185

**Latitude:** 63.092

**Quadrangle:** HE A-1

**Longitude:** 147.322

**Location description and accuracy:**

This occurrence is at an elevation of about 4,300 feet, about 4.75 miles east of Susitna Lodge and about 2 miles south of Windy Creek. The map site is on the boundary of secs. 14 and 15, T. 21 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to about 500 feet.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Azurite, chalcopyrite, malachite

**Gangue minerals:** Epidote, iron carbonate, quartz

**Geologic description:**

The area of this occurrence is underlain by the Middle or Upper Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

The deposit is in a hydrothermally altered shear zone in greenstone, and consists of quartz, epidote, chalcopyrite, and an iron carbonate mineral. Weathering produces malachite- and azurite-coated float and encrustations.

**Alteration:**

Propylitic alteration of greenstones.

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

Hydrothermally altered shear zone.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Saunders, 1961; Nokleberg and others, 1992.

**Primary reference:** Saunders, 1961

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south wall of valley of Windy Creek)

**Site type:** Occurrence

**ARDF no.:** HE186

**Latitude:** 63.100

**Quadrangle:** HE A-1

**Longitude:** 147.354

**Location description and accuracy:**

This occurrence is at an elevation of about 4,500 feet on the south wall of the valley of Windy Creek. It is near the north end of the boundary between secs. 15 and 16, T. 21 S., R. 2 E., of the Fairbanks Meridian. The site is shown as site 30 in Smith (1981). The location is accurate to within 500 feet.

**Commodities:**

**Main:** Copper

**Other:**

**Ore minerals:** Azurite, chalcopyrite, malachite

**Gangue minerals:** Epidote, iron carbonate

**Geologic description:**

The bedrock in the area of this occurrence is mainly the Middle or Upper Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

This small mineral occurrence consists of a small shear zone along which hydrothermal alteration has produced epidote, chalcopyrite, and iron carbonate minerals. Weathering produces malachite- and azurite-coated float and encrustations.

This small mineral occurrence is one of many similar deposits in the Nikolai Greenstone. Most of these occurrences are part of an east-northeast trending fault zone several miles wide.

**Alteration:**

Propylitic alteration of greenstone.

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

Hydrothermally altered shear zone.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

This occurrence is about 0.25 miles southeast of HE187.

**References:**

Glavinovich, 1967; Smith, 1981; Nokleberg and others, 1992.

**Primary reference:** Glavinovich, 1967

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s):** Unnamed (south wall of valley of Windy Creek)

**Site type:** Occurrence

**ARDF no.:** HE187

**Latitude:** 63.104

**Quadrangle:** HE A-1

**Longitude:** 147.359

**Location description and accuracy:**

This occurrence is at an elevation of about 4,400 feet on the south wall of the valley of Windy Creek. It is about 3.75 miles east northeast of Susitna Lodge, in the SE1/4 of sec. 9, T. 21 S., R. 2 E., of the Fairbanks Meridian. The location is shown as site 29 in Smith (1981). The location is accurate to within 500 feet.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Azurite, chalcopyrite, malachite

**Gangue minerals:** Epidote, iron carbonate

**Geologic description:**

The bedrock in the area of this occurrence is mainly the Middle or Upper Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

This small mineral occurrence consists of a small shear zone along which hydrothermal alteration has produced epidote, chalcopyrite, and iron carbonate minerals. Weathering produces malachite- and azurite-coated float and encrustations.

This small mineral occurrence is one of many similar deposits in the Nikolai Greenstone. Most of these occurrences are part of an east-northeast trending fault zone several miles wide.

**Alteration:**

Propylitic alteration of greenstone.

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

Hydrothermally altered shear zone

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Glavinovich, 1967; Smith, 1981; Nokleberg and others, 1992.

**Primary reference:** Glavinovich, 1967

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south side of valley of Windy Creek)

**Site type:** Occurrence

**ARDF no.:** HE188

**Latitude:** 63.11

**Quadrangle:** HE A-1

**Longitude:** 147.31

**Location description and accuracy:**

The occurrence is at an elevation of about 4,600 feet on the south side of the valley of Windy Creek. It is in the SW1/4 of sec. 11, T. 21 S., R. 2 E., of the Fairbanks Meridian. The occurrence is shown as site 31 in Smith (1981).

**Commodities:**

**Main:** Copper

**Other:**

**Ore minerals:** Azurite, chalcopyrite, malachite

**Gangue minerals:** Epidote, iron carbonate

**Geologic description:**

The bedrock in the area of this occurrence is mainly the Middle or Upper Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

This small mineral occurrence consists of a small shear zone along which hydrothermal alteration has produced epidote, chalcopyrite, and iron carbonate minerals. Weathering produces malachite- and azurite-coated float and encrustations.

This small mineral occurrence is one of many similar deposits in the Nikolai Greenstone. Most of these occurrences are part of an east-northeast trending fault zone several miles wide.

**Alteration:**

Propylitic alteration of greenstone.

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

Hydrothermally altered shear zone.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Glavinovich, 1967; Smith, 1981; Kaufman, 1964; Nokleberg and others, 1992.

**Primary reference:** Kaufmann, 1964.

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Unnamed (near Raft Creek)****Site type:** Occurrence**ARDF no.:** HE189**Latitude:** 63.07**Quadrangle:** HE A-1**Longitude:** 147.27**Location description and accuracy:**

This occurrence is at an elevation of about 3,900 feet, on of the first northwest tributary to Raft Creek. The map site is about 1.2 mile north of the Denali Highway, near the center of sec. 25, T. 21 S., R. 2 E., of the Fairbanks Meridian. This location is shown in Smith (1981).

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

The country rocks in the area of the occurrence are mostly the Nikolai Greenstone, a thick sequence of Middle or upper Triassic basalt and subordinate tuff, argillite, and chert (Nokleberg and others, 1992). At the occurrence, a small diorite pluton intrudes the Nikolai Greenstone. The deposit consists of chalcopyrite, pyrite, and malachite erratically distributed in quartz veins 1/4 to 3 inches wide. The veins occur along a shear zone several feet wide that cuts the diorite pluton.

**Alteration:**

Local oxidation and copper minerals.

**Age of mineralization:**

Middle Triassic or younger.

**Deposit model:**

Quartz vein in shear zone.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Smith, T. E., 1981; Nokleberg and others, 1992.

**Primary reference:** Smith, 1981

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south wall of valley of upper Windy Creek)

**Site type:** Occurrence

**ARDF no.:** HE190

**Latitude:** 63.110

**Quadrangle:** HE A-1

**Longitude:** 147.215

**Location description and accuracy:**

This occurrence is at an elevation of about 4,300 feet on the south wall of the valley of upper Windy Creek. It is in the NW1/4 of sec. 8, T. 21 S., R. 3 E., of the Fairbanks Meridian. The location is accurate to within 500 feet. This occurrence is site 32 in Smith (1981).

**Commodities:**

**Main:** Copper

**Other:**

**Ore minerals:** Azurite, chalcopyrite, malachite

**Gangue minerals:** Epidote, iron carbonate

**Geologic description:**

The bedrock in the area of this occurrence is mainly the Middle or Upper Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

This small mineral occurrence consists of a small shear zone along which hydrothermal alteration has produced epidote, chalcopyrite, and iron carbonate minerals. Weathering produces malachite- and azurite-coated float and encrustations.

This small mineral occurrence is one of many similar deposits in the Nikolai Greenstone. Most of these occurrences are part of an east-northeast trending fault zone several miles wide.

**Alteration:**

Propylitic alteration of greenstone.

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

Hydrothermally altered shear zone.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Glavinovich, 1967; Smith, 1981; Nokleberg and others, 1992.

**Primary reference:** Glavinovich, 1967

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00



**Site name(s): Denali Copper; Pass Creek; Caribou Dome****Site type:** Prospect**ARDF no.:** HE191**Latitude:** 63.139**Quadrangle:** HE A-1**Longitude:** 147.141**Location description and accuracy:**

The Denali Copper prospect is at an elevation of about 4,600 feet in the Clearwater Mountains, on the northwest side of the northwesternmost of the two passes between Windy Creek and the South Fork of Pass Creek. It is in sec. 34, T. 20 S., R. 3 E., of the Fairbanks Meridian. There is a short dirt airstrip located in this pass, and a dirt road connects the airstrip with a small camp at an elevation of about 4,200 feet. There is also trail access from the Denali Highway. The camp is located on the southwest bank of a gulch which traverses the mineralized area. The map site is that of the upper of two adit portals and is accurate to within several hundred feet.

**Commodities:****Main:** Cu**Other:** Ag, Zn**Ore minerals:** Azurite, bornite, chalcocite, chalcopyrite, malachite, native copper, pyrite, sphalerite**Gangue minerals:** Calcite, quartz**Geologic description:**

The Denali Copper prospect is near the upper contact of the Nikolai Greenstone, a thick sequence of Upper Triassic marine andesite and basalt, and subordinate clastic and carbonate units (Stevens, 1971, Wilson, and others, 1998). At the prospect, the strata dip at up to 80 degrees northwest and strike northeast. About a mile northwest of the prospect, the strata are cut by a strongly fractionated pluton dated by K-Ar methods at 130 to 143 m.y. (Smith, 1981).

The deposit consists of delicately-bedded to massive chalcopyrite and pyrite beds in black argillaceous limestone and black calcareous argillite. The massive, dominantly chalcopyrite beds are up to 12 inches thick and assay up to 12% copper. Pyrite commonly occurs as framboids. Minor bornite, chalcocite, and native copper occur locally, as well as sparse sphalerite. Gossans overlie the sulfide bodies and contain malachite, azurite, chalcocite, and minor chalcopyrite. A unique gossan material consisting of a jet-black earthy residue with relic bedding overlies the highest-grade portions of the sulfide horizons (D.

L. Stevens, personal observation). Several major northeast-trending, strike-slip faults traverse the area. The most important occurs in the footwall just south of the main sulfide horizon; it is marked by a zone of fault gouge 20 to 50 feet in width. Movement along this fault has induced drag-folding of the steeply-dipping sulfide horizon, producing fold amplitudes of up to 50 feet. Northwest dipping thrust faults were encountered underground on the 4630-level adit. These faults offset the main horizon about 30 feet (Stevens, 1971). Regional mapping also shows a major southeast-dipping thrust fault that strikes northeast.

The main sulfide horizon, on which most of the exploration effort has been made, is up to 400 feet long and 30 feet wide; it extends at least 1,000 feet below the surface outcrop as confirmed by drilling. The sulfide horizons are characterized by 'pinching and swelling' along strike as well as down dip. As one horizon 'pinches', other horizons may 'swell'. The deposit remains open at depth and along strike both to the northeast and southwest on at least four known horizons. Their steep dip makes additions to the reserves expensive.

The rocks in this region were regionally metamorphosed to prehnite-pumpellyite-quartz facies (Stevens, 1971), but the very fine-grained sulfide minerals in the deposit were not recrystallized, as shown by chalcopyrite grains as small as 1 micron.

This sulfide deposit is interpreted to have formed in a reducing or euxinic marine basin with abundant organic matter and sulfate reducing bacteria (Stevens, 1971). Sulfur isotope ratio analyses of the chalcopyrite and pyrite averaged -28.35 permil with a standard deviation range of only 1.01 permil (Stevens, 1971). These values strongly confirm the biogenic reduction of the seawater sulfate to produce the sulfide ion and suggest the possibility of a closed system. The copper was probably derived by weathering of the subaerial copper-rich volcanic rocks adjacent to the marine basin.

**Alteration:**

There is no hydrothermal alteration associated with the sulfide mineralization.

**Age of mineralization:**

This stratiform deposit is Late Triassic in age.

**Deposit model:**

Basaltic Cu (Cox and Singer 1986; model 23)

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

23

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

The deposit was discovered by M. A. Kaufman in 1963 while mapping for the State of Alaska Division of Mines and Minerals. It was subsequently staked by prospectors working for Leo Mark Anthony. From 1964 through 1968, exploration consisted of trenching,

geologic mapping, geochemical and geophysical surveys, and diamond core drilling.

In 1969, a 1,400-foot-long adit was driven from a portal at an elevation of 4,630 feet. This adit was driven to intersect and follow the drill-indicated trend of the widest known part of the deposit, which was informally called the main horizon. A crosscut was driven into the hanging wall approximately orthogonal to the main ore horizon to provide drill stations to intersect the down-dip extent of the main horizon. Slightly inclined percussion drill holes from this adit tested the adjacent areas out to about 100 feet. Surface diamond drilling tested the other four or five known ore horizons.

In 1970, an 1,800 foot long, minus-15-degree spiral decline was driven to provide drill stations for deep intercepts of the mineralized horizon, and to obtain bulk samples of the deposit. The main horizon has been tested by drilling as deep as 1,000 feet below outcrop. Drill testing of the other ore horizons has rarely been deeper than 300 feet.

Bulk samples for metallurgical testing were collected in both 1969 & 1970 as part of each underground exploration program. Three diamond core holes were drilled during the summer of 1999.

**Production notes:**

There has been no production.

**Reserves:**

The drill-indicated reserves of the main horizon were calculated to be 550,000 tons containing 5.84% copper, 0.3 ounces of silver per ton, and just a trace of gold (unpublished report by R. H. Seraphim, 1970). The other ore horizons have not been explored sufficiently to be included in reserve and resource calculations. The fine-grained nature of the sulfide minerals causes metallurgical complications which have largely been resolved by technological progress since the work done in the early 1970's.

**Additional comments:**

**References:**

Kaufman, 1964 (PE 67-4); Stevens, 1971; Seraphim, 1975; MacKevett and Holloway, 1977; Smith, 1981; Bundtzen and others, 1983; Wilson and others, 1998.

**Primary reference:** Seraphim, 1975

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (upper Windy Creek)

**Site type:** Occurrence

**ARDF no.:** HE192

**Latitude:** 63.1210

**Quadrangle:** HE A-1

**Longitude:** 147.1473

**Location description and accuracy:**

This occurrence is at an elevation of about 3,500 feet in the valley of a short, west-flowing tributary to upper Windy Creek. The map site is in the SW1/4 of sec. 3, T. 21 S., R. 3 E., of the Fairbanks Meridian. The location is accurate to within 250 feet.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Azurite, chalcopyrite, malachite

**Gangue minerals:** Epidote, iron carbonate, quartz

**Geologic description:**

The area of this occurrence is underlain by the Middle or Upper Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

The deposit is in a hydrothermally altered shear zone in greenstone, and consists of quartz, epidote, chalcopyrite, and an iron carbonate mineral. Weathering produces malachite- and azurite-coated float and encrustations.

**Alteration:**

Propylitic alteration of greenstone.

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

Hydrothermally altered shear zone.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Kaufman, 1964; Nokleberg and others, 1992.

**Primary reference:** Kaufmann, 1964

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (headwall cirque of Windy Creek)

**Site type:** Occurrence

**ARDF no.:** HE193

**Latitude:** 63.112

**Quadrangle:** HE A-1

**Longitude:** 147.109

**Location description and accuracy:**

This occurrence is at an elevation of about 4,900 feet in the headwall of a cirque at the head of Windy Creek. The map site is in the NE1/4 of sec.11, T. 21 S., R. 3 E., of the Fairbanks Meridian. The location is accurate to within 500 feet.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcocite

**Gangue minerals:** Epidote

**Geologic description:**

The bedrock in the area of this occurrence is mainly the Middle or Upper Triassic Nikolai Greenstone, a thick sequence of subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

This occurrence is a dome-shaped epidotized zone exposed above the bergschrund on the headwall of the cirque. The altered area is several hundred feet across. The occurrence is float on the moraine and consist of slabs of chalcocite as large as 15 inches by 10 inches by 2 to 3 inches (D. L. Stevens, personal observation).

**Alteration:**

Propylitic alteration (epidote).

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

Outcrop source of chalcocite has not been found.

**References:**

Nokleberg and others, 1992.

**Primary reference:** This record

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Valdez Creek area; Valdez Creek Mining Co.

**Site type:** Mine

**ARDF no.:** HE194

**Latitude:** 63.175

**Quadrangle:** HE A-1

**Longitude:** 147.473

**Location description and accuracy:**

This site represents an area of placer gold mining that extends from near the mouth of Valdez Creek, upstream at least as far as White Creek and Lucky Gulch. The map site is on lower Valdez Creek, about a half-mile downstream from the historic mining town of Denali. The site is in the NW1/4 of sec. 24, T. 20 S., R 1 E., of the Fairbanks Meridian. This location is accurate to within a quarter mile.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold, hessite, magnetite, pyrite

**Gangue minerals:** Quartz

**Geologic description:**

Valdez Creek drains an area underlain mostly by pelitic metasedimentary rocks of probable Jurassic age (Smith, 1981). The sedimentary sequence was regionally metamorphosed during the Cretaceous to pumpellyite-prehnite grade on the southeast, through greenschist grade, to amphibolite grade on the northwest. The metamorphic sequence appears to be telescoped, possibly by northward-dipping thrust faults. An east-trending strike-slip fault zone south of, and approximately parallel to, Valdez Creek appears to be important to the distribution of the origin of the placer gold. The fault zone has controlled the emplacement of many small intrusives of intermediate composition, and of quartz vein swarms, some of which are auriferous.

The genesis and distribution of the placer gold deposits are linked to the complex glacial history of the drainage. Near the lower end of Valdez Creek, at least three superimposed, gold-bearing paleochannels were cut into bedrock (Reger and Bundtzen, 1990). Each paleochannel is at a specific elevation and gradient, and the younger paleochannels cut the older paleochannels, thereby redistributing the gold. Gold concentrations are highest in the lowest portions of the paleochannels.

The paleochannels become less incised upstream and eventually are not found. The pay streaks merge into a large volume of lower grade auriferous gravel from the upper limit of



mining by Valdez Creek Mining Company, apparently up into the White Creek drainage.

The fineness of the gold runs about 852 with only minor variations. The gold itself showed several different varieties. Most of the gold is 'oatmeal' sized and shaped; other varieties include well-polished and rounded grains, rough, angular, and quartz-rich grains, and rough, angular, and oxide-coated grains.

**Alteration:**

**Age of mineralization:**

Paleochannel A is probably Sangamon in age, the Tammany channel is probably mid-Wisconsin in age, and Paleochannel B was probably deposited during the late Illinoian interstade (Reger and Bundtzen, 1990). The pay streaks and low-grade gravels in the White Creek drainage and Lucky Gulch are probably younger.

**Deposit model:**

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

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

39a

**Production Status:** Yes; medium

**Site Status:** Active

**Workings/exploration:**

Lower Valdez Creek was mined by hand methods after discovery in 1903. The Tammany Channel was mined by underground methods for a distance of about 3,500 feet from the confluence of the channel with Valdez Creek. The Dry Creek cut was mined by hand methods and hydraulicked. The lower portion of the Tammany Channel was hydraulicked. Channels A and B were mined by large-scale, open-pit methods for a distance of several miles upstream after have been thoroughly explored by reverse-circulation drilling during the period 1984 through 1994.

White Creek has been mined by small-scale methods below the west slope of Gold Hill and by open-pit methods just above its confluence with Valdez Creek. Lucky Gulch and its downstream extension has been mined by hand and by small-scale mechanical methods.

Timberline Creek was mined for several years where the creek enters Valdez Creek valley.

**Production notes:**

Recorded production for the Valdez Creek drainage and its tributaries is about 650,000 ounces.

**Reserves:**

Proven reserves are small because of a lack of detailed drilling. A very large quantity of gold remains but is not economic to mine at this time (1999). Detailed drilling in the

most promising areas could reveal as much as 100,000 ounces of proven reserves.

**Additional comments:**

**References:**

Mendenhall, 1905; Brooks, 1908; Moffit, 1912; Moffit, 1914; Ross, 1933; Tuck, 1938; Smith, 1970; Smith, 1981; Wiltse, 1988; Wiltse and Reger, 1989; Reger and Bundtzen, 1994.

**Primary reference:** Reger and Bundtzen, 1994

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Dry Creek Cut****Site type:** Mine**ARDF no.:** HE195**Latitude:** 63.1738**Quadrangle:** HE A-1**Longitude:** 147.4675**Location description and accuracy:**

The Dry Creek Cut is a truncated stream channel that formerly was a southwest-flowing tributary to lower Valdez Creek. It is the downstream extension of the Tammany Channel that has been cut off by present day Valdez Creek. The map site is about 1,000 feet south of the old Denali post office, in the NW1/4 of sec. 24, T. 20 S., R. 1 E., of the Fairbanks Meridian. This location is accurate to within 250 feet.

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

The geology of the general area of the Dry Creek Cut is described in records HE194 and HE197. The Dry Creek Cut is the downstream portion of the Tammany paleochannel truncated by the cross-cutting younger Valdez Creek. The base of the paleochannel was higher in elevation than Valdez Creek. The cut was mined from its lower extent upstream as far as was possible without destroying the access road to Denali. The Tammany-Dry Creek paleochannel was filled with large boulders at its base and contained a very high grade placer. The descriptions of the Valdez Creek area (HE194 and HE197) that apply to the Tammany or A paleochannel also apply to the Dry Creek Cut.

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

The same as Tammany paleochannel. Tammany channel is probably mid-Wisconsin in age (Reger and Bundtzen, 1990).

**Deposit model:**

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

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

39a

**Production Status:** Yes; medium**Site Status:** Inactive**Workings/exploration:**

The workings in this cut are impressive. In places, overburden approached 100 feet in depth. Large boulders are hand stacked adjacent to the pay channels that were mined. A telegraph pole(?) and wire are still present.

The cut appears to be mined out, except for the pay gravels that remain beneath the road.

**Production notes:**

The total production from the Dry Creek Cut is not known.

**Reserves:**

No reserves remain.

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

Ross, 1933; Tuck, 1938; Smith, 1981.

**Primary reference:** Smith, 1981**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s): Denali Bench****Site type:** Prospect**ARDF no.:** HE196**Latitude:** 63.1762**Quadrangle:** HE A-1**Longitude:** 147.4587**Location description and accuracy:**

The Denali Bench gold placer is on the south bank of lower Valdez Creek, about 0.3 mile east-southeast of the town of Denali. The map site is in the SE1/4 of sec. 13, T. 20 S., R. 1 E., of the Fairbanks Meridian. This location is accurate to within 200 feet.

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

The Denali Bench gravels, as defined by Smith (1971), are on the south side of Valdez Creek upstream from the Dry Creek Cut (HE195). The gravels occur both on the bedrock bench and in a paleochannel. The paleochannel contains large, rounded boulders; it grades upwards into well-bedded fluvial gravels. All lithologies in the gravels appear to have been derived from within the Valdez Creek valley.

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

Quaternary.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Small-scale mechanical and hydraulic operations have tested the tenor of the exposed gravels. Some drilling has been completed on portions of the bench gravels.

**Production notes:**

**Reserves:**

There is a large resource of sub-economic gold-bearing gravels.

**Additional comments:**

**References:**

Smith, 1971; Smith, 1981.

**Primary reference:** Smith, 1971

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Valdez Creek; Valdez Creek Mining Co.

**Site type:** Mines

**ARDF no.:** HE197

**Latitude:** 63.18

**Quadrangle:** HE A-1

**Longitude:** 147.46

**Location description and accuracy:**

This site represents an area of placer gold mining on lower Valdez Creek and on adjacent parts of some of its tributaries. The map site is on the northbank of lower Valdez Creek, at the northeast end of the historic mining town of Denali. The site is in the SE1/4 of sec. 13, T. 20 S., R 1 E., of the Fairbanks Meridian. This location is accurate to within a quarter mile.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold, hessite, magnetite, pyrite

**Gangue minerals:** Quartz

**Geologic description:**

The following description in part duplicates, and in part supplements, the information in record HE194.

Valdez Creek drains an area underlain by pelitic metasedimentary rocks of probable Jurassic age, and several small intrusions of intermediate composition (Smith, 1981). The sedimentary sequence was regionally metamorphosed during the Cretaceous pumpellyite-prehnite grade on the southeast, through greenschist grade, to amphibolite grade on the northwest. The metamorphic sequence appears to be telescoped, possibly by northward-dipping thrust faults. An east-trending strike-slip fault zone south of, and sub-parallel to, Valdez Creek forms a distinct topographic break from upper Timberline Creek, across the upper end of Rusty and White creeks, and on eastward along the east-west portion of the Pass Creek drainage. This zone is important to the distribution of the origin of the placer gold because it has controlled the emplacement of several of the intermediate composition intrusions as well as quartz vein swarms, some of which are auriferous. None of the northern tributaries of Valdez Creek are significant sources of placer gold.

The genesis and distribution of the placer gold deposits are also linked to the complex glacial history of the drainage. Near the lower end of the valley, at least three superimposed, gold-bearing paleochannels were cut into bedrock (Reger and Bundtzen, 1990),

probably during valley deglaciation. From youngest to oldest, the paleochannels are designated Tammany paleochannel, A paleochannel, and B paleochannel. Portions of other paleochannels were also identified by drilling. Each paleochannel is at a specific elevation and gradient, and the younger paleochannels cut the older paleochannels, thereby redistributing and reconcentrating the gold. Gold concentrations are highest in the lowest portions of the paleochannels. The gravels and cobbles in these channels indicate that the channels were a very high energy depositional environment. The paleochannels served as natural giant sluiceways to concentrate the gold. The cracks and crevices in the bedrock in the bottom of the paleochannel also collected gold to depths of at least five feet below the bedrock surface (D.L. Stevens, personal observation).

The paleochannels become less incised upstream and eventually are not found. The pay streaks merge into a large volume of lower grade auriferous gravel from the upper limit of mining by Valdez Creek Mining Company, apparently up into the White Creek drainage, and in Valdez Creek upstream from White Creek. These auriferous gravels are fluvial and glacial in origin.

The fineness of the gold runs about 852 with only minor variations. The gold itself showed several different varieties. Most of the gold is 'oatmeal' sized and shaped; other varieties include well-polished and rounded grains, rough, angular, and quartz-rich grains, and rough, angular, and oxide-coated grains.

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

Paleochannel A is probably Sangamon in age, the Tammany channel is probably mid-Wisconsin in age, and Paleochannel B was probably deposited during the late Illinoian interstade (Reger and Bundtzen, 1990). The pay streaks and low-grade gravels in the White Creek drainage and Lucky Gulch are probably younger.

**Deposit model:**

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

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

39a

**Production Status:** Yes; large

**Site Status:** Active

**Workings/exploration:**

Lower Valdez Creek was mined by hand methods after discovery in 1903. The Tammany Channel was mined by underground methods for a distance of about 3,500 feet from the confluence of the channel with Valdez Creek. The lower portion of the Tammany Channel was hydraulicked. The Dry Creek Cut was mined by hand methods and then by hydraulick methods.

From 1984 through 1994, Channels A and B were mined by large-scale, open-pit methods for a distance of several miles upstream after have been thoroughly explored by re-



verse-circulation drilling. During this period, this mine was the largest placer mine in North America. The highest single year's production was nearly 102,000 ounces of gold.

**Production notes:**

Recorded production for all of Valdez Creek exceeds 600,000 ounces.

**Reserves:**

The large volume of low-grade material upstream from the upper limit of mining by Valdez Creek Mining Company has been extensively drilled, but is not economic to mine at this time (1999). No definitive efforts have been made to classify this large resource.

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

Mendenhall, 1905; Brooks, 1908; Moffit, 1909; Moffit, 1912; Moffit, 1914; Ross, 1933; Tuck, 1938; Smith, 1971; Smith, 1981; Wiltse, 1988; Wiltse and Reger, 1989; Reger and Bundtzen, 1994.

**Primary reference:** Reger and Bundtzen, 1994

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Timberline Creek****Site type:** Mine**ARDF no.:** HE198**Latitude:** 63.18**Quadrangle:** HE A-1**Longitude:** 147.43**Location description and accuracy:**

This placer mine is on Timberline Creek, a west-flowing tributary to Valdez Creek. The center of placer mining on Timberline Creek is about 1.2 miles east northeast of Denali. The map site is in the E1/2 of sec. 18, T. 20 S., R. 2 E., of the Fairbanks Meridian. The location is shown as Site 5 in Smith, 1981.

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

Timberline Creek drains an area underlain by phyllite and argillite intruded by small, Upper Cretaceous diorite stocks. A small amount of gold has been recovered from this placer deposit. The best values occur in a channel in the prograde delta where Timberline Creek exits its valley just above Valdez Creek. The placer gold was derived from the many small lode gold occurrences in the drainage basin (HE199, HE200, HE201, HE202, and HE203).

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

Holocene. The gold placer was probably formed after the last phase of glaciation.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Surface placer mine.

**Production notes:**

Total production is not known.

**Reserves:**

**Additional comments:**

**References:**

Moffit, 1912; Tuck, 1938; Smith, 1981.

**Primary reference:** Smith, 1981

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (west side of lower Sunny Gulch)

**Site type:** Occurrence

**ARDF no.:** HE199

**Latitude:** 63.178

**Quadrangle:** HE A-1

**Longitude:** 147.408

**Location description and accuracy:**

This occurrence is at an elevation of about 4,000 feet, on an isolated knob at the north end of the ridge on the west side of Sunny Gulch, a tributary of Timberline Creek. The map site is in the SW1/4 of sec. 17. T. 21 S., R. 2 E., of the Fairbanks Meridian. The site is marked on Plate I of Smith (1981). The location is accurate to within 500 feet.

**Commodities:**

**Main:** Au

**Other:** Ag

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

The occurrence is in a small, Cretaceous intermediate intrusion. No other information about the deposit has been made public.

**Alteration:**

**Age of mineralization:**

Cretaceous or younger.

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Smith, 1981.

**Primary reference:** Smith, 1981

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (southeast of junction of Snowy Gulch and Timberline Creek)

**Site type:** Occurrence

**ARDF no.:** HE200

**Latitude:** 63.177

**Quadrangle:** HE A-1

**Longitude:** 147.393

**Location description and accuracy:**

This occurrence is at an elevation of about 4,300 feet about 0.5 mile southeast of the junction of Sunny Gulch and Timberline Creek. It is in the Se $\frac{1}{4}$  of sec. 17, T. 20 S., R. 2 E., of the Fairbanks Meridian. It is shown as Site 11 on Plate I of Smith (1981). This location is accurate to within 500 feet.

**Commodities:**

**Main:** Au

**Other:** Ag

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

This occurrence is in a Cretaceous (?) intermediate intrusion. No other information about this deposit has been made public.

**Alteration:**

**Age of mineralization:**

Cretaceous or younger.

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Smith, 1981.

**Primary reference:** Smith, 1981

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Campbell and Boedeker****Site type:** Prospect**ARDF no.:** HE201**Latitude:** 63.1760**Quadrangle:** HE A-1**Longitude:** 147.3833**Location description and accuracy:**

This prospect is at an elevation of about 3,900 feet in a small valley between Sunny Gulch and upper Timberline Creek. It is about 2.5 miles east of the old town of Denali, in SW1/4 section 16, T. 20 S., R. 2 E., Fairbanks Meridian. The location is accurate to within 250 feet.

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

The Campbell and Boedeker prospect explores one of several mineral deposits in a belt south of Valdez Creek. The Valdez Creek area is underlain by pre-Upper Triassic pelitic clastic rocks, minor tuff, limestone lenses, and conglomerate. The rocks apparently vary abruptly in regional metamorphosed grade, from prehnite-pumpellyite through greenschist and amphibolite, to granulite. These rocks are intruded by Upper Jurassic alkali gabbro and by dioritic intrusions of Late Cretaceous and Early Tertiary age (Smith, 1981).

The bedding and foliation of the strata strike about N 75 E and dip steeply northwest. Strike-slip faults having a similar orientation are also present, particularly on the south side of Valdez Creek (Smith, 1981). On the north side of the creek, a northwest-dipping thrust fault in part explains an apparent 'telescoping' of the metamorphic rocks.

The deposit consists of two-foot-thick auriferous quartz vein that cuts sheared and locally pyritized diorite. The vein contains up to 50% pyrite; it strikes N 85 E and dips 68 N. A sample of sulfide concentrates assayed 1.9 ounces of gold per ton and 1.5 ounces of silver per ton. A sample of the sheared and pyritized diorite assayed 0.18 ounces of gold per ton (Tuck, 1938).

**Alteration:**

Pyritization.



**Age of mineralization:**

Late Cretaceous or younger.

**Deposit model:**

High-sulfide auriferous quartz vein.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

A 20-foot tunnel did not penetrate weathered zone but did give good exposure of vein and host rock. A sample of sulfide concentrates assayed 1.9 ounces of gold per ton and 1.5 ounces of silver per ton. A sample of the sheared and pyritized diorite assayed 0.18 ounces of gold per ton (Tuck, 1938).

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

Tuck, 1938; Smith, 1981.

**Primary reference:** Tuck, 1938

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (ridge west of upper Timberline Creek)

**Site type:** Occurrence

**ARDF no.:** HE202

**Latitude:** 63.174

**Quadrangle:** HE A-1

**Longitude:** 147.377

**Location description and accuracy:**

This occurrence is at an elevation of about 4,200 feet on a small knob on the north end of the ridge west of upper Timberline Creek. It is in the NW1/4 of sec. 21, T. 20 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to within 500 feet.

**Commodities:**

**Main:** Au

**Other:** Ag

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

The bedrock at this site is mapped as argillite by Smith (1981), who shows several east-west faults across the site area. No other information about this occurrence has been made public.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Smith, 1981.

**Primary reference:** Smith, 1981

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Timberline****Site type:** Prospects**ARDF no.:** HE203**Latitude:** 63.188**Quadrangle:** HE A-1**Longitude:** 147.401**Location description and accuracy:**

The site represents several prospects at an elevation of about 3,950 feet on the west slope of the ridge between Timberline Creek and Valdez Creek. The map site is in the N1/2 of sec. 17, T. 20 S., R. 2 E., of the Fairbanks Meridian. The location is accurate to within 1,000 feet. These prospects are shown as Sites 6 through 10 on Plate I of Smith, 1981.

**Commodities:****Main:** Ag, Au, Cu**Other:****Ore minerals:** arsenopyrite, cHALCOPYRITE, gOLD, pyrite, pYRRHOTITE**Gangue minerals:** CALCITE, qUARTZ**Geologic description:**

The country rock in the area of this site is spotted phyllite, cut by CHLORITIZED DIORITE of probable Cretaceous age. The deposit consists of five veins in shear zones in altered diorite. The largest vein, the Big Caribou, has been traced for 1,000 feet; it is up to 8 feet wide, and contains kidneys and lenses of quartz, arsenopyrite, pyrite, pyrrhotite, and chalcopyrite. Other veins include the Big Water Hole, Freda G., Valdez Creek 6, and Little Caribou. Veins comprise quartz bands up to 2 feet wide. Some of the sulfides also are disseminated in the diorite. The veins appear to be localized in a conjugate fracture system associated with east-trending fault zones. Samples of the veins contain up to 0.33 ounce of gold per ton (Smith, 1981).

**Alteration:**

The quartz veins are associated with chloritization of the adjacent diorite.

**Age of mineralization:**

Probably Cretaceous or younger.

**Deposit model:**

Polymetallic veins (Cox and Singer, 1986, model 22c)

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

22c

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Surface exploration consists of trenches and pits along the traces of the veins. A short adit was driven which encountered the down-dip extension of the Big Caribou and Little Caribou vein systems. Samples of the veins contain up to 0.33 ounce of gold per ton (Smith, 1981).

**Production notes:**

A small mill was installed in about 1934; it consisted of a jaw crusher, ball mill, classifier, and amalgamating plates. Production was very small.

**Reserves:**

**Additional comments:**

This was one of the very few lode gold producers in the Valdez Creek drainage.

**References:**

Ross, 1933; Smith, 1936 (B 864); Smith, 1936 (B 868); Smith, 1937; Tuck, 1938; Kaufman, 1964; Smith, 1971; Smith, 1981.

**Primary reference:** Smith, 1981

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (southwest slope of Rusty Hill)

**Site type:** Occurrence

**ARDF no.:** HE204

**Latitude:** 63.2049

**Quadrangle:** HE A-1

**Longitude:** 147.4302

**Location description and accuracy:**

This occurrence is at an elevation of about 4,100 feet on the southwest slope of Rusty Hill, about 2.25 miles north northeast of Denali. The map site is just inside the south boundary of sec. 6, T. 20 S., R. 1 E., of the Fairbanks Meridian. This location is accurate to about 250 feet.

**Commodities:**

**Main:** Cu

**Other:** Ag, Au

**Ore minerals:** Chalcopyrite, gold, pyrite, pyrrhotite

**Gangue minerals:** Quartz

**Geologic description:**

The country rock at this occurrence is spotted phyllite (Smith, 1981). The deposit consists of hydrothermally altered pyritized phyllite(?), cut along fractures by numerous quartz-sulfide veins as much as a foot thick (Ross, 1933). The sulfide minerals are pyrite, pyrrhotite, and chalcopyrite that carry trace amounts of gold and silver. The prospect has been known since the mid-1930's, and displays a distinct color anomaly.

**Alteration:**

Hydrothermal alteration has been described as pyritization and quartz veining.

**Age of mineralization:**

Hornblende has been K/Ar-dated by Smith (1981) at 64.1 Ma.

**Deposit model:**

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Ross, 1933; Smith, 1981.

**Primary reference:** Smith, 1981

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Lower White Creek****Site type:** Mines**ARDF no.:** HE205**Latitude:** 63.20**Quadrangle:** HE A-1**Longitude:** 147.32**Location description and accuracy:**

This site represents an area of gold placer mines on lower White Creek. The map site is at the junction of White and Rusty creeks, at the west-central edge of sec. 11, T. 20 S., R. 2 E., of the Fairbanks Meridian. With its tributaries, Rusty, Little Rusty, and Big Rusty creeks, White Creek has a total drainage basin of more than ten square miles.

**Commodities:****Main:** Ag, Au**Other:** Cu, Pb**Ore minerals:** ArSENOPYRITE, GALENA, gold, HESSITE, MAGNETITE, NATIVE Copper, ORPIMENT, pyrite, PYRRHOTITE, REALGAR**Gangue minerals:** Quartz**Geologic description:**

White Creek drains the west slope of Gold Hill, which probably is the source of much of the placer gold. The productive part of White Creek is its lower end, which consists of a prograde delta containing a large volume of low-grade auriferous gravels. Intercalated with the gold-bearing fluvial gravels are several extensive fine-grained, black, delicately cross-bedded, barren lake sediment deposits up to twenty feet thick.

The best paystreaks appear to be high-energy channels cut through the low-grade gravels and lake sediments. These channels contain boulders up to four feet in diameter but are not incised into bedrock to any appreciable extent. The lower end of these channels appears to spread out over older gravels to form blanket deposits that contain elevated gold values. These gold-bearing gravels merge with lower grade Valdez Creek gravels at the lower end of White Creek. The White Creek gravels probably were the source for most of the gold reconcentrated in the Valdez Creek channel deposits farther downstream (D.L. Stevens, personal observations).

Other auriferous ground is on the lower slopes of Gold Hill just above White Creek. Systematic ground sluicing downslope from a water ditch revealed auriferous gravels and rock derived from up slope. The lode source of this gold has not been found.



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

Stratigraphic relations suggest that the pay streak on White Creek is younger than the paleochannels on lower Valdez Creek.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small

**Site Status:** Active

**Workings/exploration:**

Lower White Creek was first drilled in 1987, and has been mined each summer commencing about 1990.

The lower slope of Gold Hill was mined during the 1930's, and there has been small-scale mining more recently.

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

Confidential data.

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

Mendenhall, 1905; Brooks, 1908; Moffit, 1909; Moffit, 1912; Moffit, 1914; Ross, 1933; Tuck, 1938; Smith, 1971; Smith, 1981; Wiltse, 1988; Wiltse and Reger, 1989; Reger and Bundtzen, 1994.

**Primary reference:** Reger and Bundtzen, 1994

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Hot Air Bench; Last Chance Creek****Site type:** Prospect; Mine**ARDF no.:** HE206**Latitude:** 63.2029**Quadrangle:** HE A-1**Longitude:** 147.3030**Location description and accuracy:**

The Hot Air Bench gold placer prospect is on the south side of Valdez Creek on the prominent terrace between White Creek and Lucky Gulch. This site also includes a placer mine in a small gulch locally called Last Chance Creek, which is a tributary of Valdez Creek. The map site is just inside the north-central border of sec. 11, T. 20 S., R. 2 E., of the Fairbanks Meridian. This location is accurate to within 100 feet.

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

The Hot Air Bench consists mostly of glacial-moraine gravels and of fluvial channels that cross the bench. All of the gravels are auriferous but none is rich enough to mine at this time (1999). A limited cross section is exposed in Last Chance Creek, along the lower portion of the bench, where Valdez Creek fluvial gravels are interbedded with apparently glacial-moraine gravels. In drill holes along the lower portion of the bench there was a large amount of ground water (D. L. Stevens, personal observations).

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

Quaternary. Most of the bench probably consists of moraines from the last phase of valley glaciation.

**Deposit model:**

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

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

39a

**Production Status:** Yes; small**Site Status:** Active**Workings/exploration:**

In 1986, a reconnaissance-scale drilling program tested these gravels. The Last Chance Creek gulch has been mined sporadically since the early days in the district. The most recent mining was in the mid-1980's. The gold is bright and shiny and some nuggets were found (D.L. Stevens, personal observations).

**Production notes:**

There has been very small production.

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

This record.

**Primary reference:** This record**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s): Lucky Gulch****Site type:** Mine**ARDF no.:** HE207**Latitude:** 63.199**Quadrangle:** HE A-1**Longitude:** 147.274**Location description and accuracy:**

This placer gold mine is in Lucky Gulch, a north-flowing tributary to Valdez Creek between White Creek and Roosevelt Creek. The map site is in sec. 12, R. 2 E., T 20 S., of the Fairbanks Meridian. This creek is located about 9 miles up Valdez Creek from Denali. The location is accurate to within 500 feet. The mine is shown as site 17 in Smith (1981).

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

Lucky Gulch drains an area of variably metamorphosed, pre-Upper Triassic, clastic and carbonate strata that are intruded by Upper Jurassic gabbro and by diorite plutons of Late Cretaceous and Early Tertiary age (Smith, 1981).

The pay gravels of Lucky Gulch consist mainly of poorly sorted, angular, slate fragments. Lucky Gulch contains the largest gold nuggets found in the district; nuggets up to 52 ounces have been recovered. The auriferous creek gravels are up to 25 feet deep in a very steep, narrow drainage. Most of the gold was concentrated on bedrock and most of present channel has been worked out. A large alluvial fan has been formed where Lucky Gulch exits its narrow valley enters Valdez Creek. This alluvial fan may contain significant quantities of finer gold, but probably at a lower overall grade than in the gulch (D.L. Stevens, personal observation). The source of the gold may be auriferous quartz veins at the Lucky Top prospect (HE210).

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

Probably formed in Holocene time.

**Deposit model:**

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

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

39a

**Production Status:** Yes; medium

**Site Status:** Active

**Workings/exploration:**

Lucky Gulch has been mined from the upper extremity of paying gravels in the headwaters down to the upper portion of the alluvial fan by both underground and surface placer mining methods. The alluvial fan has been sporadically mined in several locations.

**Production notes:**

Total recorded production through 1925 was about 3,000 ounces. Since that date, cumulative production is probably about equal to that amount. (D. L. Stevens, personal observation, 1999).

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

Lucky Gulch has produced the coarsest placer gold in the district.

**References:**

Moffit, 1912; Ross, 1933; Tuck, 1938; Smith, 1981.

**Primary reference:** Moffit, 1912

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Yellowhorn****Site type:** Prospect**ARDF no.:** HE208**Latitude:** 63.197**Quadrangle:** HE A-1**Longitude:** 147.288**Location description and accuracy:**

This prospect is at an elevation of about 3,900 feet on the north slope of Gold Hill, between Lucky Gulch and White Creek. The site is in sec. 12, T. 20 S., R. 2 E., of the Fairbanks Meridian. This location is accurate to within 1,000 feet.

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

The country rock at this prospect is micaceous schist of unknown age. Foliation strikes 58 SE and dips 18 N. The deposit is a 4-foot-wide shear zone consisting, from the top down, of a one-foot-wide quartz vein, with three feet of schist cut by small quartz seams, and quartz stringers. Most of the quartz is sugary and contains vugs lined with terminated crystals. Good values of gold were panned from the weathered material, but there was some indication that in the unweathered material, the gold was in the sulfides, rather than free-milling (Tuck, 1936).

**Alteration:**

There is a color anomaly associated with the prospect due to weathering of pyrite.

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

Low-sulfide Au-quartz veins (Cox and Singer, 1986; model 36a)

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

36a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface trenches and cuts, one short tunnel and one 60-foot tunnel that missed the lode.

**Production notes:**

**Reserves:**

**Additional comments:**

Shear zones in this area having shallow northward dips are part of a thrust zone best exposed underground at the Denali Copper prospect (HE191).

**References:**

Moffit, 1912; Tuck, 1938; Smith, 1981.

**Primary reference:** Tuck, 1938

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Accident****Site type:** Occurrence**ARDF no.:** HE209**Latitude:** 63.1901**Quadrangle:** HE A-1**Longitude:** 147.2776**Location description and accuracy:**

This occurrence is at an elevation of about 4,800 feet, just west of the summit of Gold Hill between Lucky Gulch and White Creek. The map site is on the boundary of secs. 7 and 18, T. 20 S., R. 3 E., of the Fairbanks Meridian. The location is shown as site 18a in Smith (1981). This position is accurate to within 200 feet.

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

The Accident prospect explores one of several mineral deposits in a belt south of Valdez Creek. The Valdez Creek area is underlain by pre-Upper Triassic pelitic clastic rocks, minor tuff, limestone lenses, and conglomerate. The rocks apparently vary abruptly in regional metamorphosed grade, from prehnite-pumpellyite through greenschist and amphibolite, to granulite. These rocks are intruded by Upper Jurassic alkali gabbro and by dioritic intrusions of Late Cretaceous and Early Tertiary age (Smith, 1981).

The bedding and foliation of the strata strike about N 75 E and dip steeply northwest. Strike-slip faults having a similar orientation are also present, particularly on the south side of Valdez Creek (Smith, 1981). On the north side of the creek, a northwest-dipping thrust fault in part explains an apparent 'telescoping' of the metamorphic rocks.

The Accident occurrence consists of a quartz vein on the same lode system(?) as the Yellowhorn prospect (HE208). Decomposed slates are intruded by siliceous, fine-grained leucocratic rock containing abundant pyrite. The gold vein contains galena and sphalerite.

**Alteration:**

Quartz, sericite, and pyrite alteration of host phyllite and small silicic dike.



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

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

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

36a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface sampling and trenching.

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

A rocker set up in a gulch 300 to 400 feet above Accident lode was reported to have obtained good gold values from stream gravel.

**References:**

Moffit, 1912; Ross, 1933; Smith, 1981; Tuck, 1938.

**Primary reference:** Ross, 1933

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Lucky Top****Site type:** Prospect**ARDF no.:** HE210**Latitude:** 63.189**Quadrangle:** HE A-1**Longitude:** 147.248**Location description and accuracy:**

This prospect is at an elevation of 500 feet about 0.2 mile northwest of the top of Lucky Hill. It is on the boundary of secs. 7 and 18, T. 20 S., R. 3 E., of the Fairbanks Meridian. The location is accurate to within 500 feet. This site is loc. 17 in Smith (1981) and loc. 52 in Clark and Cobb (1972).

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

The country rocks at the Lucky Top prospect is pelitic phyllite containing biotite porphyroblasts, and minor garnet and actinolitic hornblende. The hornblende at a nearby locality has been dated by K-Ar methods at 64.1 Ma (Smith, 1981).

The deposit consists of an auriferous, banded, comb-quartz vein in well-defined slate walls. It is accompanied by gouge and slickenslides and contains arsenopyrite and galena. Some small specimens of the quartz run very high in gold (Tuck, 1938). The placer on Lucky Gulch (HE207), located directly downslope from this prospect, is well known for its nuggets and coarse placer gold.

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

The vein cuts phyllite containing 64.1 Ma actinolitic hornblende.

**Deposit model:**

Low-sulfide Au-quartz veins (Cox and Singer, 1986; model 36a)

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

36a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There has been surface sampling and test pitting with occasional spectacular gold values. An adit was started in 1936 to test down-dip extension below outcrop.

**Production notes:**

**Reserves:**

**Additional comments:**

This vein is the probable source area for the placer gold and large nuggets in Lucky Gulch (HE207) below it.

**References:**

Tuck, 1938; Smith, 1981; Wiltse, 1988; Wiltse and Reger, 1989.

**Primary reference:** Smith, 1981

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s): Lucky Hill-TMC; Rainbow Hill****Site type:** Prospect**ARDF no.:** HE211**Latitude:** 63.179**Quadrangle:** HE A-1**Longitude:** 147.246**Location description and accuracy:**

This prospect is near the south end of Lucky Hill at an elevation of about 4,500 feet. It is in sec. 18, T. 20 S., R. 3 E., of the Fairbanks Meridian. This location is accurate to within 500 feet.

**Commodities:****Main:** Ag, Au**Other:** Pb, Zn**Ore minerals:** Arsenopyrite, galena, gold, pyrite, pyrrhotite, sphalerite**Gangue minerals:** Ankerite, quartz, sericite**Geologic description:**

The Lucky Hill-TMC prospect explores one of several mineral deposits in a belt south of Valdez Creek. The Valdez Creek area is underlain by pre-Upper Triassic pelitic clastic rocks, minor tuff, limestone lenses, and conglomerate. The rocks apparently vary abruptly in regional metamorphosed grade, from prehnite-pumpellyite through greenschist and amphibolite, to granulite. These rocks are intruded by Upper Jurassic alkali gabbro and by dioritic intrusions of Late Cretaceous and Early Tertiary age (Smith, 1981).

The bedding and foliation of the strata strike about N 75 E and dip steeply northwest. Strike-slip faults having a similar orientation are also present, particularly on the south side of Valdez Creek (Smith, 1981). On the north side of the creek, a northwest-dipping thrust fault in part explains an apparent 'telescoping' of the metamorphic rocks.

The Lucky Hill-TMC deposit apparently is in semischist and consists of free gold and minor pyrite, pyrrhotite, arsenopyrite, galena, and sphalerite in sheeted quartz veins that strike east-west and dip steeply to the northwest. A distinctive, yellowish, ankeritic carbonate accompanies the gold-quartz veins. Ar-Ar ages on primary micas from a dioritic pluton give an emplacement age of 90-100 Ma. The age of sericite in the veins is 57-63 Ma.

Exploration trenching and drilling show at least five stacked gold-bearing, sheeted zones over a vertical range of 600 feet. Drill-inferred reserves have been established over a strike length of 1,000 feet on the western extension of the TMC zone. Induced polariza-

tion surveys have extended the zone along strike for over 5,000 feet (unpublished report by Fairbanks Exploration Inc.).

**Alteration:**

The mineralization is associated with sericitic alteration and ankeritic carbonate.

**Age of mineralization:**

Early Tertiary, based upon Ar-Ar dating of sericite.

**Deposit model:**

Low-sulfide Au-quartz veins (Cox and Singer, 1986; model 36a)

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

36a

**Production Status:** None**Site Status:** Active?**Workings/exploration:**

There are numerous backhoe and dozer trenches on the prospect. Drilling has been done on the best portions of the prospect. Induced polarization surveys have been conducted along strike.

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

Drill-inferred reserves are 261,998 tons, averaging 0.151 ounce gold per ton (unpublished report by Fairbanks Exploration Inc.).

**Additional comments:**

There is excellent access by vehicle from the Denali Highway. From the old townsite of Denali, the road along the north side of lower Valdez Creek reclaimed area extends past Lucky Gulch. From Lucky Gulch a narrow trail along the east side of the Gulch can be followed southward up the hill to the prospect area.

**References:**

Smith, 1981; Wiltse, 1988; Wiltse and Reger, 1989.

**Primary reference:** Freeman, et al., 1990 (unpublished report by Fairbanks Exploration Inc.)**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s):** Black Creek; Wagner and associates; Wagner lode

**Site type:** Prospect

**ARDF no.:** HE212

**Latitude:** 63.18

**Quadrangle:** HE A-1

**Longitude:** 147.23

**Location description and accuracy:**

The map site of this prospect is at an elevation of about 4,100 feet on the west side of Eldorado Creek, about 0.4 mile south of Black Creek. It is in the SE1/4 of sec. 18, T. 20 S., R. 3 E., of the Fairbanks Meridian. The prospect is shown as site 21 in Smith, 1981.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Arsenopyrite, gold, pyrite, pyrrhotite

**Gangue minerals:** Calcite, quartz

**Geologic description:**

The Black Creek prospect explores one of several mineral deposits in a belt south of Valdez Creek. The Valdez Creek area is underlain by pre-Upper Triassic pelitic clastic rocks, minor tuff, limestone lenses, and conglomerate. The rocks apparently vary abruptly in regional metamorphosed grade, from prehnite-pumpellyite through greenschist and amphibolite, to granulite. These rocks are intruded by Upper Jurassic alkali gabbro and by dioritic intrusions of Late Cretaceous and Early Tertiary age (Smith, 1981).

The bedding and foliation of the strata strike about N 75 E and dip steeply northwest. Strike-slip faults having a similar orientation are also present, particularly on the south side of Valdez Creek (Smith, 1981). On the north side of the creek, a northwest-dipping thrust fault in part explains an apparent 'telescoping' of the metamorphic rocks.

The Black Creek deposit apparently consists of sulfide-bearing, locally auriferous quartz veins in sheared, brecciated, and altered sedimentary and dioritic intrusive rocks. The sulfide minerals include arsenopyrite, pyrite, and pyrrhotite. Recurrent movement along faults, pulses of hydrothermal alteration, and recurrent injection of quartz veins has produced complex geology in the prospect area (Smith, 1981). The prospect area is rust stained in the vicinity of the adit due to the oxidation of iron sulfide minerals. There is a gold and arsenic geochemical anomaly around the prospect area.

Smith (1981) mapped an old adit consisting of about 200 feet of underground workings. He reported argillite, metagraywacke and dioritic intrusive rock, all displaying varying de-

grees of shearing, quartz veining, and brecciation. Samples on ten foot intervals contained gold values as high as 120 parts per million. Underground development which terminated in 1998, did not find gold values of economic interest. No drilling has been done.

**Alteration:**

Pyritization; silicification; and local iron staining.

**Age of mineralization:**

Late Cretaceous or Early Tertiary, because the quartz veins cut dioritic intrusions that are probably that age.

**Deposit model:**

Low-sulfide Au-quartz vein (Cox and Singer, 1987; model 36a)

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

36a

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

One adit and short drifts totaling 220 feet in length. Samples of this adit contained 4 ppm to 86 ppm gold (Smith, 1981). There is another adit and a small mill on the property.

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

Ross, 1933; Smith, 1970; Smith, 1981; Tuck, 1938.

**Primary reference:** Smith, 1970**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)**Last report date:** 4/7/00

**Site name(s): Grogg Creek****Site type:** Prospect**ARDF no.:** HE213**Latitude:** 63.2058**Quadrangle:** HE A-1**Longitude:** 147.1131**Location description and accuracy:**

This gold placer prospect is along Gregg Creek, a tributary to upper Valdez Creek. The map site is near the head of Gregg Creek, in the S1/2 of sec. 2, T. 20 S., R. 3 E., of the Fairbanks Meridian. This location is accurate to within 200 feet.

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

Grogg Creek drains an area underlain by pelitic schists and small intrusions of intermediate composition. The creek flows over glacio-fluvial gravels, but none of the workings has exposed the deeper gravels. Gold in small concentrations occurs throughout the extent of the creek and there have been many small-scale, hand-mining operations.

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

Probably the same age as the White Creek gravels (HE205); ie., younger than the paleochannels on lower Valdez Creek (HE194).

**Deposit model:**

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

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

39a

**Production Status:** Yes; small



**Site Status:** Inactive

**Workings/exploration:**

There are many indications of small scale mining, both past and recent, on Grogg Creek. All operations appear to have been limited to near-surface gravels, and operations were apparently conducted without the benefit of any drilling (D.L. Stevens, personal observations).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Smith, 1981.

**Primary reference:** Smith, 1981

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

**Site name(s):** Unnamed (south of lower Windy Creek)

**Site type:** Occurrences

**ARDF no.:** HE214

**Latitude:** 63.09

**Quadrangle:** HE A-1

**Longitude:** 147.36

**Location description and accuracy:**

This occurrence is at an elevation of about 4,800 feet on a ridge about 2.2 miles south of lower Windy Creek. The site is in the SE1/4 of sec. 16, T. 21 S., R. 2 E., of the Fairbanks Meridian.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Azurite, bornite, chalcocite, chalcopyrite, covellite, native copper

**Gangue minerals:** Epidote, quartz, siderite?

**Geologic description:**

The general area of this occurrence is underlain by the Middle or Upper Triassic Nikolai Greenstone, which consists of massive, subaerial and submarine basalt flows and minor interbedded volcanoclastic sedimentary rocks, aquagene and epiclastic tuff, breccia, argillite, and radiolarian chert (Nokleberg and others, 1992).

The occurrence is in greenstone and consists of a small, hydrothermally altered shear zone containing epidote, copper sulfide minerals, and possibly native copper and an iron carbonate mineral. Weathering locally produces malachite and azurite-coated float and encrustations.

**Alteration:**

Propylitic alteration of greenstone.

**Age of mineralization:**

Triassic or younger.

**Deposit model:**

Hydrothermally altered shear zone.

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

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Surface chip sampling only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Kaufman, 1964 (PE 67-4); Glavinovich, 1967; Smith, 1981; Saunders, 1961; Nokleberg and others, 1992.

**Primary reference:** Glavinovich, 1967

**Reporter(s):** D.L. Stevens (Stevens Exploration Management Corporation)

**Last report date:** 4/7/00

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