UNITED STATES DEPARTMENT OF THE INTERIOR

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MAP AND DISCUSSION OF THE METALLIFEROUS AND SELECTED NONMETALLIFEROUS MINERAL RESOURCES OF THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA

By

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This report is preliminary and has not been reviewed for conformity with Geological Survey standards and nomenclature

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Introduction

This report consists of a text, three tables, references cited and an accompanying map, and it is the culmination of a mineral resource assessment of the Talkeetna Mountains quadrangle of Alaska. The report was prepared as part of a multidisciplinary assessment of the quadrangle by the U.S. Geological Survey's Alaska Mineral Resource Assessment Program (AMRAP). It represents an integration of the geologic, geochemical, and geophysical investigations of the program; the other components are listed in the references at the end of this report.

The general form of this assessment is consistent with that used in the AMRAP program (Singer, 1975). An attempt is made to estimate the resources in the ground in such a way that different assumptions about intensity and quality of exploration, future prices, and mining costs can be tested to estimate potential supply. Three basic steps are attempted. First, tracts of land are delineated according to the kinds of mineral deposits their character will permit. Second, the number of deposits within each tract is estimated. And third, characteristics of the ore in deposits are estimated by means of models of average grades and tonnages based on similar well-explored deposits.

Tracts of land that are geologically permissive for the occurrence of mineral deposit types are delineated on the accompanying map. These tracts were outlined on the basis of their known deposits (listed in Table 3 and shown on the map) and their potential for undiscovered deposits as inferred on the basis of occurrences in similar geologic settings elsewhere. Table 3 was previously published by Csejtey and

Miller (1978). The outer limit of delineated tracts was not allowed to extend beyond geologic units that are permissive for the occurrence of a deposit type, and tracts were further restricted in areal extent if closer examination demonstrated absence of mineralization. Criteria that were used to identify and delimit each tract are presented in Table 1. The undelineated tracts, including areas of thick unconsolidated sediments, were also investigated for mineral deposits. Although these tracts may contain deposits of placer gold, zeolites, and barium (see page 7), the available geological, geochemical, and geophysical data did not permit delineation.

Probabilistic estimates of the number of deposits of each type were made for the few tracts where such estimates were warranted by available information. The estimates were made subjectively, and are presented in a probabilistic form in order to show the degree of certainty concerning the number of deposits that might occur. In order to provide estimates which agree in general with the established format of AMRAP assessments (Singer, 1975; Singer and Ovenshine, 1979, p. 588), in this report we have estimated the number of mineral deposits possibly present in each tract from a cumulative distribution diagram at the arbitrarily chosen 10, 50, and 90 percent confidence levels. Thus, at the 90 percent level there is a 90 percent chance that the actual number of deposits in the tract is equal to or exceeds the estimate. A variety of pertinent considerations were integrated, including degrees of geologic, geochemical, and geophysical favorability; extent and adequacy of exploration and geologic knowledge; and extent of exploration of deposits already recognized.

Grade-tonnage models are provided for four deposit types: porphyry

copper, porphyry molybdenum, felsic to intermediate volcanogenic, and mafic volcanogenic (Table 2). Models were based on well-explored deposits for which tonnages of mineralized rock would be calculated by adding past production to estimated reserves or resources. Deposits known to be incompletely explored were excluded in constructing models. A more extensive discussion of the models can be found in Menzie and Singer (in press).

The mineral resources in the quadrangle are discussed below by tract and by deposit type. Grade-tonnage models are mentioned where applicable. Estimates of the number of deposits are also presented by tract for the few situations where it was possible to make such estimates. Several commodities and/or deposit types are not specifically delineated because of their widespread occurrence or apparent lack of geologic control; these are described in the section following the discussion of resources by tract.

Tract T_1

This tract is delineated for disseminated tin deposits. Tin values range from 20 to 15,000 ppm in the nine rock samples of alaskite and muscovite granite reported by Reed (1978). Values of 100 and 150 ppm silver were reported from two of Reed's samples and disseminated cassiterite was observed in three samples. The distribution of high values of tin in stream sediment and pan concentrate samples (Miller and others, 1978a) suggests that tin mineralization is widespread in the tract. Additional work is required to determine the extent and grade of tin mineralization. It was not possible to construct a grade-tonnage model for this deposit type.

Tract T_2

No tin-bearing occurrences are known in this tract, however the presence of geochemical anomalies of tin and related elements (Miller and others, 1978a) like those in Tract T_1, and the presence of the same age and general types of granite as those in Tract T_1 suggest that this tract also deserves further work.

Tract P_1

Two porphyry molybdenum prospects are known in this tract, but neither has been drilled intensively enough to determine whether their sizes and grades are comparable to the deposits used to construct the porphyry molybdenum grade-tonnage model (Table 2). Although permissive granitic rocks are widespread, the number of geochemical anomalies is not large. On the basis of this evidence, the number of porphyry molybdenum deposits comparable to the grade-tonnage model is subjectively estimated to be:

(1) a 90 percent chance that there are 1 or more deposits;

(2) a 50 percent chance that there are 2 or more deposits;

(3) a 10 percent chance that there are 2 or more deposits; that is, the chance that there are more than two deposits is estimated to be much less than 10 percent.

Tract P_2

A few anomalous values of copper and gold from pan concentrate and stream sediment samples, a low-grade disseminated molybdenum and gold occurrence (map no. 19), and an aeromagnetic pattern indicative of either a zoned or altered pluton that is incompletely exposed, suggest the possibility of either porphyry copper or molybdenum deposits in this tract.

The number of porphyry copper or molybdenum deposits comparable to the grade-tonnage models of these deposit types (Table 2) is subjectively estimated to be:

(1) a 90 percent chance that there are 0 or more deposits;

(2) a 50 percent chance that there are 1 or more deposits;

(3) a 10 percent chance that there are 1 or more deposits; that is, the chance that there is more than one deposit is estimated to be much less than 10 percent.

Tract P_3

This tract is delineated for porphyry copper and/or porphyry molybdenum deposits. There is one known porphyry copper prospect (map no. 88) that has had some drilling by industry. Scattered geochemical anomalies and a float sample of altered granodiorite containing molybdenum are suggestive of other mineralization in the tract. The number of porphyry copper or molybdenum deposits comparable to the grade-tonnage models of these deposit types (Table 2) is subjectively estimated to be:

(1) a 90 percent chance that there are 1 or more deposits;

(2) a 50 percent chance that there are 1 or more deposits;

(3) a 10 percent chance that there are 2 or more deposits.

Tract P_4

The presence of porphyry copper and/or molybdenum type deposits in this tract is suggested by numerous float samples of altered granitic rocks containing copper and/or molybdenum, several prospects in altered granitic rocks, and numerous anomalous samples containing copper, molybdenum, and lead. The number of porphyry copper and/or porphyry

molybdenum deposits comparable to the grade-tonnage models (Table 2) is subjectively estimated to be:

(1) a 90 percent chance that there are 1 or more deposits;

(2) a 50 percent chance that there are 2 or more deposits;

(3) a 10 percent chance that there are 3 or more deposits.

Tract V_1 (P)

Widespread pan concentrate samples having high concentrations of lead, arsenic, gold, tungsten, molybdenum, copper, tin, and bismuth suggest that Tract V_1 (P) contains base and precious metal vein deposits. Such deposits would be localized in granitic rocks and the associated older sediments. Although a grade-tonnage model is not available, deposits of this type typically have low tonnage. Porphyry molybdenum deposits are also indicated as possible because of the extension of the favorable rocks of Tract P_1 into Tract V_1 (P) and the numerous geochemical anomalies, some of which may be related to porphyry molybdenum mineralization.

Tract V_2

The Tertiary felsic volcanic rocks in this tract are associated with numerous pan concentrate samples with high values of copper, lead, arsenic, silver, zinc, and molybdenum; locally there are high values of tungsten, bismuth, and tin. The only known occurrences are claims for copper and gold, apparently veins, and altered andesite dikes containing low values of tin and zinc. Based on this evidence, the tract is delineated for base and precious metal vein deposits that typically have low tonnage but locally may have high grades.

Tract Msv_1

This tract is delineated for mafic to intermediate volcanogenic massive sulfide deposits and for copper in amygdaloidal basalts. Numerous copper and related sulfide-bearing prospects and occurrences of veins and local disseminations in altered intermediate to mafic metavolcanics of upper Paleozoic age are known. There are also some indications of copper in the upper Triassic amygdaloidal metabasalts, but little is known about the extent of these occurrences. A large proportion of the geochemical samples from this extensive tract contain anomalous amounts of the metals that are commonly associated with veins and volcanogenic massive sulfide deposits. Although this tract contains numerous base and precious metal veins, tonnages of the volcanogenic massive sulfide deposits that are believed to exist in the tract dwarf those of the veins. A grade-tonnage model for intermediate to mafic volcanogenic deposits does not exist, however, grade-tonnage models for felsic to intermediate volcanogenic and for mafic volcanogenic deposits are provided in Table 2 in order to demonstrate the grades and tonnages that may exist in this tract. Tonnages are similar for the two models; the main difference is the presence of lead in some of the felsic to intermediate deposits. Lead is known to occur in some of the prospects and occurrences in this tract.

Undelineated Tracts

Some of the commodities or deposit types that are not specifically delineated are discussed below.

In the Horn Mountains and Albert Creek region, extensive deposits of mordenite and other zeolites of possible economic interest are known

(see Table 3, map number 112). The known deposits are in the tuffaceous part of the Lower Jurassic Talkeetna Formation. Similar deposits probably occur elsewhere in the Talkeetna Formation.

Claims for placer gold are widely distributed in the quadrangle. For the placer gold deposits of the Nelchina area, Grantz (1956) suggests that continental gravels of Eocene age, inferred to have overlain most of the area, contained concentrations of placer gold which were reworked during late Pleistocene and Recent time to form the present placers. The source of the other placer gold in the quadrangle is not known. About 150 oz. of gold was produced from Albert Creek (map number 111), the only placer deposit in the quadrangle with proven production. Because of the scanty production, it is believed that there is little chance of significant future production of gold from the quadrangle's placer deposits.

Throughout the quadrangle, a large number of the heavy mineral concentrate samples showed apparently anomalous concentrations of barium (Miller and others, 1978k), however, the source of this barium is not known.

In spite of two creeks having the name Coal Creek in the quadrangle, no significent deposits of coal are known or suspected.

Table 1.--Deposit type and criteria for selection of mineral resource tracts in the Talkeetna Mountains quadrangle, Alaska.

[Numbers in parentheses are the map numbers of mineral deposits, prospects and occurrences listed on the accompanying resource map and in Table 3.
Sources of information for the various criteria are: Csejtey and others (1978), geology; Miller and others (1978a-l), Miller and others (1978), geochemistry; Csejtey and Griscom (1978), aeromagnetics; Csejtey and Miller (1978), mineral deposits.]

Tract outlined on map	Types of deposit(s) possible and criteria used to delineate tracts
T_1	Disseminated tin deposits (a) Known disseminated tin prospect containing cassiterite (4). (b) Pervasive alteration (addition of boron and flourine). (c) Small outcrop of greisenized muscovite granite containing tourmaline, topaz, sericite, and minor flourite. (d) High concentrations of tin and locally silver, arsenic, copper and zinc in rock samples. (e) Anomalous concentrations of tin, gold, and zinc in stream sediment samples. (f) High concentrations of tin, silver, tungsten, barium, arsenic and gold in pan concentrate samples.
T_2	Disseminated tin deposits (a) Same age and general type of granite as in T_1. (b) Consistently high tin and tungsten and locally high gold and silver values in pan concentrate samples. (c) One anomalous tin value in a stream sediment sample.
P_1	Porphyry molybdenum deposits (a) Two porphyry molybdenum prospects are known (8,9). (b) Forcibly emplaced epizonal plutons of biotite, granodiorite and adamellite. (c) Anomalous concentrations of lead, zinc, and one sample each of molybdenum and copper in stream sediment samples. (d) High concentrations of lead, tungsten and tin in pan concentrate samples.
P_2	Porphyry copper or porphyry molybdenum (a) Very low-grade disseminated occurrence (19) containing molybdenum and gold located in granodiorite. (b) Aeromagnitic pattern that suggests either compositionally zoned or an altered pluton that is incompletely exposed. (c) Two stream sediment samples have anomalous gold values. (d) Two pan concentrate samples have high copper values.

Table 1. (continued)

P_3 Porphyry copper and/or porphyry molybdenum
- (a) A prospect (88) containing copper minerals and molybdenite disseminated in altered granitic rock is known.
- (b) A float sample (86) of altered granodiorite with disseminated pyrite is probably from P_3.
- (c) Forcibly emplaced epizonal plutons of biotite granodiorite.
- (d) Several stream sediment samples contain anomalous concentrations of zinc, molybdenum, lead, and copper.
- (e) Several pan concentrate samples contain high values of tungsten, bismuth, and molybdenum; one sample contains high values of gold, copper, and silver.

P_4 Porphyry copper and/or porphyry molybdenum
- (a) Float samples containing pyrite, copper-bearing minerals, or molybdenum in altered granitic rocks or quartz veins (64, 65, 67, 89, 90, 96, 98).
- (b) Two prospects reported as gold (95), and copper, gold and silver claims (94) in tonalite; molybdenum-bearing altered granodiorite (66); disseminated sulfides in quartz diorite (50).
- (c) Biotite-hornblende tonalite locally grading into quartz diorite of Late Cretaceous and Jurassic ages; intermixed mosaic of amphybolite, quartz diorite, and granodiorite.
- (d) Anomalous stream sediment samples contain lead and copper; one sample each anomalous in molybdenum and tin.
- (e) Numerous pan concentrate samples containing high values of molybdenum and copper; several samples contain high tungsten values.

$V_1(P)$ Base and precious metal veins and/or porphyry molybdenum deposits
- (a) Argentiferous galena in quartz veinlets (31) and several placer gold deposits (32, 33, 34, 35, 36) known.
- (b) Forcibly emplaced epizonal plutons of biotite granodiorite exposed in southeastern $V_1(P)$ and partially exposed in northwestern $V_1(P)$.
- (c) Majority of stream sediment samples have anomalous concentrations of lead; several samples have anomalous values of gold, copper, silver, and zinc.
- (d) High concentrations of lead, arsenic, gold, tungsten, molybdenum copper, tin, and bismuth in pan concentrate samples.

Table 1. (continued)

V_2 Base and precious metal vein deposits

(a) Lode claims for copper and gold, apparently veins (63); pyritiferous altered andesite dikes contain low values of tin and zinc (62).

(b) Tertiary felsic subaerial volcanic rocks and related shallow intrusives.

(c) Based on aeromagnetics, V_2 is restricted to felsic portions of Tv.

(d) Numerous high copper, lead, arsenic, silver, zinc, and molybdenum values in pan concentrate samples; locally high tungsten, bismuth, and tin values.

(e) Local anomalous values of lead, gold, and tin in stream sediment samples.

Msv_1 Mafic to intermediate volcanogenic and copper-in-amygdaloidal-basalt deposits

(a) Numerous copper and related sulfide-bearing prospects and occurrences of veins and local disseminations in altered intermediate to mafic metavolcanics of upper Paleozoic age (e.g. 17, 27, 48, 76, 81, 82, 92).

(b) Altered sulfide-bearing dikes of felsic volcanics probably Tertiary in age (15, 16, 70).

(c) Paleozoic marine sequence of dominantly metamorphosed flows and tuffs having basaltic to andesitic composition; subordinate upper Triassic shallow marine amygdaloidal metabasalts, partially unmapped; locally unmapped Tertiary felsic dikes.

(d) Anomalous concentrations of molybdenum, copper, lead, zinc, gold, and silver in stream sediment samples.

(e) Pan concentrate samples with high values of tungsten, silver, and molybdenum; locally high values of bismuth, arsenic, copper, zinc, lead, and gold.

Table 2.--Grade and tonnage models for mineral deposits of the Talkeetna Mountains quadrangle, Alaska

[Related data occur in line from column to column; all tonnages in metric units; **, significant at 1 percent level]

Deposit Type	Tonnage and grade variables (units in parenthesis)	Number of Deposits used to develop model	Correlation coefficient of listed variable with variable on line with it in column 2	90 percent of deposits have at least	50 percent of deposits have at least	10 percent of deposits have at least
Porphyry copper	Tonnage of "ore" (millions of tons)	38		18.00	89.00	450.00
	Average copper grade (percent)	38	With tonnage of "ore" = -0.08	.10	.25	.55
Porphyry molybdenum	Tonnage of "ore" (millions of tons)	34		.27	28.00	430.00
	Average molybdenum grade (percent)	34	With tonnage of "ore" = -.11	.07	.12	.24
Mafic volcanogenic massive sulfide	Tonnage of "ore" (millions of tons)	37		.24	2.30	22.00
	Average copper grade (percent)	37	With tonnage of "ore" = -.13	1.10	2.20	4.10
	Average zinc grade excluding deposits without reported grades (percent)	19	With tonnage of "ore" = .03	.30	1.30	5.50
	Average gold and silver grades locally significant but not determined					
Felsic and intermediate volcanogenic massive sulfide	Tonnage of "ore" (millions of tons)	89		.19	1.90	16.00
	Average copper grade (percent)	89	With tonnage of "ore" = -.41**	.54	1.70	5.40
	Average zinc grade excluding deposits without reported grades (percent)	41	With tonnage of "ore" = .25	1.40	3.80	10.00
	Average lead grade excluding deposits without reported lead grades (percent)	14	With tonnage of "ore" = -.02	.20	.95	4.80
	Tonnage contained gold excluding deposits without reported gold (tons Au)	38	With tonnage of "ore" = .73**	.27	2.90	32.00
	Tonnage contained silver excluding deposits without reported silver (tons Ag)	46	With tonnage of "ore" = .82**	5.00	80.00	1300.00

Table 3.--Mines, prospects, and mineral occurrences in the Talkeetna Mountains quadrangle, Alaska.

Explanatory note

In this report the term "mineral deposits" is used in the broad sense to include deposits, both lode and placer, at mines and prospects as well as unclaimed occurrences, regardless of economic significance. Localities of geochemical rock samples with anomalous metal concentrations have also been included. Geochemical rock samples are considered to be anomalous when out of the selected ten metallic elements, one element greatly exceeds or two or more elements at least reach the following empirically chosen concentration levels (in parts per million): silver--0.7, arsenic--200, gold--0.25, chromium--1,500, copper--1,000, molybdenum--7, lead--70, antimony--300, tin--10, and zinc--500. The sample numbers of these anomalous geochemical rock samples from prospects as well as from unclaimed occurrences, including float samples, are given in parentheses in the Principal references column of this table. Complete analytical data for all geochemical rock samples collected by the U.S. Geological Survey in the study area have been reported by Miller and others (1978).

Explanation of table headings

Map no. and name(s) (if known)

Map no. refers to a specific deposit on the accompanying map. Name(s) of prospects or mines are derived from published sources or from general usage. In several cases, more than one prospect or occurrence is grouped under the same map number.

Location

Location refers to the standard township and range land designations relevant to specific parallels and meridians on the U.S. Geological Survey quadrangle map used as a base for this report.

Category

M -- mine
P -- prospect
O -- occurrence

The terms mines, prospect, and occurrences are used as follows:

Mine -- a mineral deposit with recorded production. Ore was mined but not necessarily shipped.

Prospect -- a deposit which has been staked and, in many cases, has been scantily explored; lacks evidence of production. Claims may or may not be active. Some of the placer gold deposits that

are listed as prospects probably have had at least meager production but, because of lack of definitive evidence, they are classified as prospects.

Occurrence -- generally a minor deposit that, as far as known, is unclaimed and is mainly known from recent U.S. Geological Survey field investigations or from the analyses of geochemical rock samples. Also includes the locations of float samples with anomalous concentrations of metals. The criteria for anomalous geochemical rock samples are discussed in the Explanatory note of this table.

Resource(s) (minor constituents or potential byproducts in Parentheses)

Indicates commodity or commodities that are known or reported at each locality. Question marks are used where presence of commodity is inferred from indirect evidence or based on unverified reports. Commodities are listed in decreasing order of probable commercial value or of abundance in the deposits. Metallic commodities are denoted by standard chemical symbols.

Form

Denotes the physical aspect of a deposit. Queried where uncertain. Left blank for occurrences based on mineralized rock samples found only in float.

Type

Rather speculative designation concerning the genesis of the deposit. Queried where based on insufficient information. Left blank for mineralized rock samples found only in float.

Brief description

Provides brief descriptions of the geology and mineralogy of the deposits and, where applicable, production data. Several prospects are known only from a U.S. Bureau of Mines claim map (1973); information of these is generally limited to reported commodities and category of deposit.

Principal references

Cites sources for information used in the table and map. For prospects and occurrences known primarily from analyzed geochemical rock samples reported by Miller and others (1978), the sample field numbers are given in parentheses.

Abbreviations used

Standard chemical symbols are used; for example, Cu - copper, Au - gold, Sn - tin.

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
1	T.33N.,R.4W.	P	Ag,As,Mo(Pb,Au)	Disseminated	Hydrothermal	Small pyrite-bearing mineralized zone in brecciated chert and argillite of unit Jta. Several claims in adjacent area	Miller and others, 1978 (sample no. 75NwO95); U.S. Bur. Mines, 1973
2	T.22S.,R.12W.	P	Au(Ag)	Vein	Hydrothermal	Lode claims in chert and argillite of unit Jta	U.S. Bur Mines, 1973; MacKevett and Holloway, 1977
3	T.22S.,R.12W.	P	Au	Vein	Hydrothermal	----------do.----------	-------Do.-------
4	T.22S.,R.12W.	P	Sn(Ag,As,Cu,Mo, Zn,Pb)	Disseminated	"Porphyry tin"	Primarily tin mineralization (cassiterite) in small outcrop of greisenized Tertiary granitic intrusive into unit DSga	Reed, 1978
5	T.32N.,R.2W.	O	Cr(Pb)	Disseminated	Metamorphic?	Scattered pyrite in altered contact metamorphosed argillite and graywacke of unit Kag; adjacent to Tertiary granitic intrusion	Miller and others, 1978 (sample no. 75NwO03A)
6	T.32N.,R.2W.	P	Cu(Au)	Vein?	Hydrothermal?	Lode claims in small Tertiary granitic intrusion	MacKevett and Holloway, 1977; U.S. Bur. Mines, 1973
7 Mint	T.32N.,R.1E.	M	Sb,Ag,Cu,As(Pb, Au)	Veinlets	Hydrothermal	Pyrargyrite and miargyrite, along with minor amounts of other sulfides, in quartz veinlets cutting argillite of unit Kag. Some production. Several lode claims in adjacent areas	Capps and Short, 1926; Richter, 1963; Berg and Cobb, 1967, p. 27; Cobb, 1972; MacKevett and Holloway, 1977
8	T.32N.,R.1E.	P	Mo(Cu,Zn)	Disseminated	Hydrothermal, porphyry?	Molybdenite, pyrite, minor chalcopyrite, and sphalerite in silicified shear zone within Tertiary granitic intrusion	Richter, 1963
9 Treasure Creek	T.32N.,R.1E.	P	Mo(Cu,Au,Zn)	Vein and veinlet	Hydrothermal	Molybdenite and associated sulfides in contact metamorphosed argillite and graywacke of unit Kag; adjacent to Tertiary granitic intrusion	-----Do.-----

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
10	T.33N.,R.7W.	O	(Au,Ag)	Vein	Hydrothermal	Small quartz veins in argillite of unit Kag. No visible ore minerals	Miller and others, 1978 (sample no. 75NW132)
11	T.32N.,R.4E.	O	Mo(Pb)	Disseminated	Hydrothermal?	Scattered pyrite in mica schist adjacent to Tertiary granitic intrusion	Miller and others, 1978 (sample no. 77Cy016B)
12	T.22S.,R.5W.	P	Au	Disseminated	Placer	Several claims in creek bed. Surficial deposits are too small to show at the scale of geologic map	U.S. Bur. Mines, 1973
13	T.22S.,R.3W.	O	Au(Ag)	Disseminated	Hydrothermal	Pyrite and quartz in alteration zone within Tertiary granitic intrusion	Miller and others, 1978 (sample no. 73St0070); T. E. Smith, written commun., 1973
14	T.22S.,R.2W.	O	(Mo)	Disseminated?	Hydrothermal?	Low-grade, sulfide-bearing alteration zone in mafic metavolcanic rocks of unit Trv	Miller and others, 1978 (sample no. 73St1035); T.E. Smith, written commun., 1973
15	T.22S.,R.2W.	O	Ag(Mo,Au)	Disseminated	Porphyry?	Small sulfide-bearing alteration zone in felsic volcanic dike intruding mafic metavolcanic rocks of unit Trv	Miller and others, 1978 (sample nos. 73St1030, 73St0040); T. E. Smith, written commun., 1973
16	T.22S.,R.2W.	P	(Cu)	Disseminated	Porphyry?	Low-grade, chalcopyrite-bearing mineralized felsic volcanic dike cutting mafic metavolcanic rocks of unit Trv	MacKevett and Holloway, 1977; U.S. Bur. Mines, 1973

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
17	T.33N.,R.9E.	0	Cu	Disseminated?	Volcanogenic?	Low-grade copper mineralization in mafic metavolcanic rocks of unit Trv	Miller and others, 1978 (sample no. 73St1050); T. E. Smith, written commun., 1973
18 Lichen	T.32N.,R.11E.	P	Cu(Au,Ag)	Disseminated and veinlet	Submarine volcanogenic	Chalcopyrite, bornite, and other copper minerals scattered in a mafic metavolcanic flow of unit Pzv. Mineralized zone extends for about 900 m, and it is less than 2 m wide	Smith and others, 1975
19	T.32N.,R.9E.	0	(Mo,Au)	Disseminated	Porphyry? Hydrothermal?	Very low-grade, sulfide-bearing mineralized zone in quartz diorite of unit TKg	Miller and others, 1978 (sample no. 73St0164); T. E. Smith, written commun., 1973
20	T.32N.,R.9E.	0	As(Ag,Pb)	---	---	Disseminated sulfide minerals in float of mafic metavolcanic rock	Miller and others, 1978 (sample no. 73St1107); T. E. Smith, written commun., 1973
21	T.32N.,R.9E.	0	Ag(As,Mo,Sn,Au)	---	---	Disseminated fine-grained sulfide minerals in float of mafic metavolcanic rock	Miller and others, 1978 (sample no. 73St1099); T. E. Smith, written commun., 1973
22	T.32N.,R.8E.	0	Ag(Mo,Pb,Sn,Zn)	Disseminated, vein?	Hydrothermal?	Very low-grade, sulfide-bearing mineralized zone in mafic to intermediate metavolcanic rocks of unit Pzv	Miller and others, 1978 (sample nos. 73St1100, 73St1101); T. E. Smith, written commun., 1973

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
23	T.32N.,R.9E.	O	(Ag,Mo,Zn)	---	---	Float of altered mafic to intermediate metavolcanic rock	Miller and others, 1978 (sample no. 73Stl104); T. E. Smith, written commun., 1973
24	T.32N.,R.8E.	O	(Ag,Mo)	Disseminated	Hydrothermal?	Very low grade, sulfide-bearing mineralized shear zone in mafic to intermediate metavolcanic rocks of unit Pzv	Miller and others, 1978 (sample nos. 73Stl103, 73Stl105); T. E. Smith, written commun., 1973
25	T.32N.,R.8E.	P	Cu	Disseminated, massive, and vein?	Hydrothermal?	Copper minerals, mainly chalcopyrite, within an extensive shear zone along contact between units Trv and Pzv	MacKevett and Holloway, 1977; U.S. Bur. Mines, 1973
26	T.31N.,R.9E.	O	(Cu,Au)	Veinlet	Hydrothermal	Minor chalcopyrite and pyrite in small quartz vein cutting mafic metavolcanic rocks of unit Pzv. Exposures too small to show on geologic map	Miller and others, 1978 (sample no. 7TM276)
27	T.30N.,R.7E.	O	(Ag)	Vein	Hydrothermal	Minor pyrite in small quartz vein cutting mafic metavolcanic rocks of unit Pzv	Miller and others, 1978 (sample no. 72Cy038)
28	T.31N.,R.3E.	P	Au	Disseminated	Placer	Placer claim at the mouth of small tributary of Susitna River	U.S. Bur. Mines, 1973
29	T.30N.,R.3E.	P	Au	Disseminated	Placer	Placer claim along small creek incised into extensive Quaternary surficial deposits	------Do.------

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
30	T.30N.,R.2E.	P	Au	Disseminated	Placer	Placer claim along small creek incised into extensive Quaternary surficial deposits	U.S. Bur. Mines, 1973
31 Ihly	T.30N.,R.1W.	P	Ag,Pb	Vein	Hydrothermal	Argentiferous galena in quartz veinlets that cut an altered felsic volcanic dike in rocks of unit Kag	Berg and Cobb, 1967, p. 27
32	T.31N.,R.2W.	P	Au	Disseminated	Placer	Several placer claims along creek in alluvium too small to show on geologic map	MacKevett and Holloway, 1977; U.S. Bur. Mines, 1973
33 Susitna River-Gold Creek	T.31N.,R.2W.	P	Au	Disseminated	Placer	Gold placers sporadically explored for many years; possibly token production. Location shown on map is only approximate	Capps, 1919a, p. 231; Cobb, 1972
34	T.29-30N.,R.2W.	P	Au	Disseminated	Placer	Placer claims along upper Chunilna River in alluvial deposits too small to show on geologic map	MacKevett and Holloway, 1977; U.S. Bur. Mines, 1973
35	T.28-29N.,R.3W.	P	Au	Disseminated	Placer	Placer claims in alluvium too small to show on geologic map	-----Do.-------
36	T.28N.,R.4W.	P	Au	Disseminated	Placer	----------do.----------	-----Do.-------
37	T.28N.,R.3W.	P	Au	Disseminated	Placer	----------do.----------	-----Do.-------
38	T.27-28N.,R.3-4W.	P	Au	Disseminated	Placer	Placer claims in alluvium along Chunilna River	-----Do.-------
39	T.27N.,R.3-4W.	P	Au	Disseminated	Placer	Placer claims in alluvium too small to show on geologic map	-----Do.-------
40	T.28N.,R.2E.	O	(Ag,Au,Pb)	Disseminated	Hydrothermal	Very fine grained disseminated, pyrite-bearing gossan along shear zone in mafic metavolcanic rocks of unit Pzv	Miller and others, 1978 (sample no. 75Cyl058)
41	T.28N.,R.2E.	O	Zn	Disseminated	Hydrothermal	Pyrite-bearing gossan in sheared metaandesite of unit Pzv	Miller and others, 1978 (sample no. 750r007)

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (If known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
42	T.28N.,R.2E.	0	Mo,Ag(Pb,Sn,As)	Disseminated	Hydrothermal	Deep-red to light-brown, pyrite-bearing, extensive gossan in aphanitic intermediate metavolcanic rocks of unit Pzv	Miller and others, 1978 (sample nos. TM0287RD, 75Dr014, 75MS011)
43	T.29N.,R.3E.	0	Cu(Au,Mo)	Vein, disseminated	Hydrothermal	Quartz veinlets with pyrite cutting pyrite-bearing alteration zone, containing some malachite stains, in mafic metavolcanic rocks of unit Pzv. Extent of mineralized alteration zone appears to be small	Miller and others, 1978 (sample nos. 72Cy073, 72Cy061)
44	T.28N.,R.3E.	0	Cu(Zn)	Disseminated	Volcanogenic?	Altered mafic metavolcanic rocks of unit Pzv. No visible ore minerals	Miller and others, 1978 (sample no. 74Cy062)
45	T.28N.,R.4E.	0	Ag,Cu	Disseminated	Hydrothermal?	Small brecciated shear zone, with limonite and malachite, in mafic metavolcanic rocks of unit Pzv	Miller and others, 1978 (sample no. 75Nw141)

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (If known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
46	T.28N.,R.4E.	O	Cu	Disseminated	Hydrothermal	Minor chalcopyrite and pyrite in small alteration zone within argillite of unit Pzv	Rose, 1967, p. 5
47	T.28N.,R.5E.	O	(Au,Ag)	Disseminated	Hydrothermal	Scattered pyrite in altered phyllite of unit Pzv	Rose, 1967, p. 4
48	T.28N.,R.5E.	P	Cu	Disseminated	Volcanogenic? Hydrothermal?	Copper minerals and pyrite in mafic metavolcanic rocks of unit Pzv	MacKevett and Holloway, 1977
49	T.28N.,R.5E.	O	Cu	Vein, replacement	Hydrothermal? Submarine volcanogenic?	Pyrrhotite and chalcopyrite within greenstone of unit Pzv. Extent of mineralized zone is small	Rose, 1967, p. 5
50	T.28N.,R.5E.	O	(Cu,Au,Ag)	Disseminated	Hydrothermal? Porphyry?	Minor pyrite, pyrrhotite, and chalcopyrite; disseminated in altered gneissose quartz diorite of unit Jpm	Rose, 1967, p. 4
51	T.28N.,R.5E.	O	(Ag,Cu)	---	---	Float of vein quartz with pyrite and chalcopyrite	Anderson, 1969, p. 10-12
52	T.28N.,R.5E.	O	(Cu)	Veinlets, disseminated	Hydrothermal?	Minor pyrrhotite and chalcopyrite, disseminated and in veinlets cutting altered metagabbro of unit Pzv	Rose, 1967, p. 4
53	T.28N.,R.9E.	P	Au(Pt)	Disseminated	Placer	Placer claims along upper Busch Creek incised into extensive Quaternary surficial deposits	U.S. Bur. Mines, 1973
54	T.10N.,R.10W.	O	(Zn)	Disseminated	Porphyry?	Small felsic volcanic dike with traces of pyrite, cutting greenstone of unit Jpm	Miller and others, 1978 (sample no. 77Cy070B)
55	T.26N,R.1DE.	P	Au	Disseminated	Placer	Several placer claims along Oshetna River	U.S. Bur. Mines, 1973
56 Gold Creek	T.25-26N.,R.9E.	P	Au	Disseminated	Placer	Several placer claims along Gold Creek in Quaternary alluvium too small to show on geologic map	Chapin, 1918, p. 64; U.S. Bur. Mines, 1973; Cobb, 1972

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
57 Granite Creek	T.26N.,R.9E.	P	Au	Disseminated	Placer	Placer claim along lower Granite Creek	Chapin, 1918, p. 64
58	T.26N.,R.8E.	O	Zn	Veinlets	Hydrothermal	Limonite and pyrite along fractures in small gossan within metaandesite of unit Jtk	Miller and others, 1978 (sample no. 77Cy080)
59	T.26N.,R.8E.	P	Cu(Au)	Vein?	Hydrothermal?	Lode claims in granitic rocks of unit Jpm	U.S. Bur. Mines, 1973; MacKevett and Holloway, 1977
60 Roaring Creek	T.25N.,R.8E.	P	Au	Disseminated	Placer	Placer claims along lower Roaring Creek	Chapin, 1918, p. 64
61	T.25N.,R.5E.	P	Au	Disseminated	Placer	Several placer claims	U.S. Bur. Mines, 1973
62	T.26N.,R.6E.	O	(Sn,Zn)	Disseminated	Porphyry?	Tertiary, pyritiferous, altered andesite dikes cutting diorite of unit Jpm	Miller and others, 1978 (sample no. 74Cy078A)
63	T.26N.,R.4E.	P	Cu?,Au?	Veins?	Hydrothermal?	Lode claims in Tertiary volcanic rocks	U.S. Bur. Mines, 1973; MacKevett and Holloway, 1977

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
64	T.26N.,R.3E.	O	Ag,Cu(Au)	---	---	Float of vein quartz with pyrite, chalcopyrite, and possibly pyrrhotite	Miller and others, 1978 (sample no. TM0066RA)
65	T.26N.,R.3E.	O	Cu(Sn)	---	---	Float of vein quartz with pyrite and malachite stains	Miller and others, 1978 (sample no. 73Cy126)
66	T.25N.,R.3E.	O	(Mo)	Veinlets	Hydrothermal	Pyrite-bearing quartz veinlets in altered granodiorite of unit Jpm	Miller and others, 1978 (sample no. TM0103RB)
67	T.25N.,R.3E.	O	Cu(Pb,Au)	---	---	Float of pyrite and malachite-bearing altered granitic rock	Miller and others, 1978 (sample no. TM0104R)
68	T.25N.,R.3E.	P	Cu	Vein?	Hydrothermal?	Copper minerals, mainly malachite, in brecciated granitic rocks of unit Jpm. Site of diamond drilling in early 1970's. Several claims in area	MacKevett and Holloway, 1977; U.S. Bur. Mines, 1973
69	T.25N.,R.2E.	O	Co,Cr,Ni(Zn, Au)	Disseminated	Magmatic? and (or) hydrothermal?	Altered mafic metavolcanic rock, possibly serpentinite, of unit Pzv. No visible ore minerals	Miller and others, 1978 (sample nos. TM0050RA, TM0050RB, TM0050RC)
70	T.26N.,R.2E.	O	Ag,Mo(Pb,Zn, Au)	Disseminated	Hydrothermal?	Altered, pyrite-bearing felsic dike of unit Tv cutting mafic metavolcanic rocks of unit Pzv	Miller and others, 1978 (sample nos. TM0107RB, TM0107RE)
71 Eastview	T.26N.,R.2E.	P	Cu	Vein	Hydrothermal	Quartz veins, with pyrite and chalcopyrite, cutting metaandesite of unit Pzv	Capps, 1919b, p. 203
72 Phoenix	T.26N.,R.2E.	P	Cu	Vein	Hydrothermal	Chalcopyrite, hematite, minor bornite, and quartz in veinlets cutting sheared metaandesite of unit Pzv	Capps, 1919b, p. 202

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
73 Blue Lode	T.26N.,R.2E.	P	Cu	Vein, replacement	Hydrothermal	Chalcopyrite and bornite in gouge within metaandesite of unit Pzv	Capps, 1919b, p. 202-203
74 Ice Cream Mountain, Rainbow Lake	T.26N.,R.2E.	P	Cu	Vein?	Hydrothermal?	Several lode claims in mafic metavolcanic rocks of unit Pzv. Probably same geologic conditions as in the Eastview, Phoenix, and Blue Lode claims	U.S. Bur. Mines, 1973
75 Talkeetna	T.26N.,R.2E.	P	Cu,Ag(Au,Mo)	Vein, disseminated	Hydrothermal	Replacement lodes along shear zones and in adjacent wall rock of mafic metavolcanic rocks of unit Pzv. The lodes contain chalcopyrite, hematite, pyrite, and quartz. Several lode claims in area	Capps, 1919b, p. 203-204; Miller and others, 1978 (sample nos. 73Cy123, 75Cy127)
76	T.26N.,R.2E.	P	Cu	Vein? Disseminated?	Hydrothermal	Several lode claims in mafic metavolcanic rocks of unit Pzv	U.S. Bur. Mines, 1973
77	T.26N.,R.3E.	O	Cu(Pb)	Disseminated, vein	Hydrothermal	Small replacement lodes and veinlets with chalcopyrite in altered mafic metavolcanic rocks of unit Pzv	Miller and others, 1978 (sample no. 73Cy122)

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
78	T.27N.,R.3E.	O	(Cr)	Disseminated	Volcanogenic?	Altered mafic metavolcanic rock of unit Pzv. No visible ore minerals	Miller and others, 1978 (sample no. TM0057R)
79 Copper Wonder	T.26N.,R.2E.	P	Cu(Fe)	Vein, replacement	Hydrothermal	Chalcopyrite, hematite, pyrite, and quartz in a zone of sheared metaandesite of unit Pzv	Capps, 1919b, p. 201-202
80	T.26N.,R.2E.	O	Zn(Pb,Au)	Vein, disseminated	Hydrothermal	Disseminated pyrite and quartz veinlets in altered mafic metavolcanic rock of unit Pzv	Miller and others, 1978 (sample no. 75Cy044)
81 Copper King	T.26N.,R.1E.	P	Cu,Au,Ag	Disseminated, veins	Hydrothermal	Chalcopyrite, hematite, pyrite, and quartz in zone of sheared metaandesite of unit Pzv	Capps, 1919b, p. 201
82 Iron Creek, Morning Star	T.26N.,R.1E.	P	Cu	Veins?	Hydrothermal?	Several lode claims in mafic metavolcanic rocks of unit Pzv. Geologic conditions probably similar to that of the Copper King claim	U.S. Bur. Mines, 1973
83 Copper Queen	T.26N.,R.1E.	P	Cu,Au	Disseminated, replacement	Hydrothermal	Pyrite, chalcopyrite, arsenopyrite, and quartz in a zone of sheared and altered mafic metavolcanic rocks of unit Pzv. Exposure is along the bank of Iron Creek in a rock bluff too small to show on geologic map	Capps, 1919b, p. 199-201
84	T.27N.,R.2E.	O	Cu,Ag(Au,Zn,Pb)	Vein	Hydrothermal	Quartz vein, about 60 cm thick, with chalcopyrite, pyrite, and malachite stains. Country rock is mafic metavolcanic rock of unit Pzv	Miller and others, 1978 (sample nos. 73Cy124, 75Cy009A)
85	T.27N.,R.1E.	P	Au	Disseminated	Placer	Placer claims along small creek in alluvium too small to show on geologic map	U.S. Bur. Mines, 1973
86	T.27N.,R.1E.	O	(Mo)	---	---	Float of altered granodiorite with disseminated pyrite	Miller and others, 1978 (sample no. TM184RB)

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
87	T.26N.,R.1W.	O	Ag,As,Cu,Zn(Pb)	Disseminated	Hydrothermal	Dark-red to yellow,pyrite-bearing gossan in mafic metavolcanic rocks of unit Pzv. No visible ore minerals	Miller and others, 1978 (sample no. 75Dr002)
88	T.25N.,R.1W.	P	Cu,Mo(Pb,Au,Zn)	Disseminated	Porphyry	Copper minerals and molybdenite disseminated in altered Tertiary granitic rock of unit unit Tbgd	MacKevett and Holloway, 1977; Miller and others, 1978 (sample nos. 75Cy157B, 77Cy010, TM024RB, TM024RD, TM024RA)
89	T.25N.,R.1W.	O	(Cu,Zn,Au)	---	---	Float of pyrite-bearing and silicified granitic rock	Miller and others, 1978 (sample no. TM0015RB)
90	T.25N.,R.1W.	O	(Pb,Sn,Au)	---	---	Float of pyrite-bearing vein quartz	Miller and others, 1978 (sample nos. TM0017RB, TM0017RC, TM0017RE)

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
91	T.24N.,R.2W.	O	(Cr,Sb,Sn)	Disseminated	Porphyry? Hydrothermal?	Altered granitic rock of unit TKg with mafic metavolcanic xenoliths. No visible ore minerals	Miller and others, 1978 (sample no. 74Cy029A)
92	T.24N.,R.2W.	O	(Ag,Sn,Zn,Au)	Disseminated	Hydrothermal? Volcanogenic?	Altered metaandesite of unit Pzv. No visible ore minerals	Miller and others, 1978 (sample no. 74Cy030)
93	T.23N.,R.3W.	P	Au	Disseminated	Placer	Placer claims, location uncertain	U.S. Bur. Mines, 1973
94	T.23N.,R.1E.	P	Cu,Au,Ag	Vein?	Hydrothermal?	Lode claims in tonalite of unit TKt	------Do.------
95	T.23N.,R.1E.	P	Au?	Vein?	Hydrothermal?	----------do.----------	------Do.-------
96	T.24N.,R.1E.	O	Ag,Cu(Au)	---	---	Float of vein quartz with pyrite, chalcopyrite, and malachite stains	Miller and others, 1978 (sample no. 72Cy110)
97	T.24N.,R.2E.	O	Cr(Ni,Sb)	---	---	Several float samples of altered mafic metavolcanic rocks, possibly serpentinite. No visible ore minerals	Miller and others, 1978 (sample nos. 74Cy097A, 74Cy097C, 74Cy097D)
98	T.24N.,R.2E.	O	Ag,Cu(Pb,Au)	---	---	Float of malachite-stained granitic rock	Miller and others, 1978 (sample no. 74Cy096)
99 Mazuma Creek, Caribou Creek	T.22-23N.,R.9E.	P	Au	Disseminated	Placer	Several placer claims along Mazuma Creek and Caribou Creek in alluvium too small to show on geologic map	Martin and Mertie, 1914, p. 279-280; U.S. Bur. Mines, 1973; Cobb, 1973, p. 19
100	T.23-24N.,R.10E.	P	Au	Disseminated	Placer	Several placer claims along upper Little Nelchina River in alluvium too small to show on geologic map	U.S. Bur. Mines, 1973

Table 3. (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
101 Yacko Creek	T.25N.,R.11E.	P	Au	Disseminated	Placer	Several placer claims along Yacko Creek in alluvium too small to show on geologic map. Possibly some minor production	Chapin, 1918, p. 64; U.S. Bur. Mines, 1973
102 Fourth of July Creek	T.25-26N.,R.12E.	P	Au	Disseminated	Placer	Several placer claims along Four of July Creek in alluvium too small to show on geologic map	Chapin, 1918, p. 64; Cobb, 1972
103 T.6N.,R.10W.	T.6N.,R.10W.	P	Au	Disseminated	Placer	Several placer claims in alluvium too small to show on geologic map	U.S. Bur. Mines, 1973
104 Daisy Creek	T.6N.,R.10W., T.25N.,R.12E.	P	Au	Disseminated	Placer	Several placer claims along Daisy Creek in alluvium	Chapin, 1918, p. 64; Cobb, 1972; U.S. Bur. Mines, 1973
105	T.25N.,R.12E.	P	Au	Disseminated	Placer	Several placer claims along upper Daisy Creek in alluvium too small to show on geologic map	U.S. Bur. Mines, 1973
106	T.4N.,R.10W.	P	Au	Disseminated	Placer	Several placer claims	------Do.-------
107	T.3N.,R.10W.	P	Au	Disseminated	Placer	Placer claim along Old Man Creek	------Do.-------

Table 3. (continued)

MINES, PROSPECTS, AND MINERAL OCCURRENCES IN THE TALKEETNA MOUNTAINS QUADRANGLE, ALASKA (continued)

MAP NO. AND NAME(S) (if known)	LOCATION	CATEGORY	RESOURCE(S) Minor constituents or potential byproducts in parentheses	FORM	TYPE	BRIEF DESCRIPTION	PRINCIPAL REFERENCES
108 Crooked Creek	T.23N.,R.12E.	P	Au	Disseminated	Placer	Placer claims along lower Crooked Creek	Chapin, 1918, p. 60-61
109 Willow Creek	T.23N.,R.12E.	P	Au	Disseminated	Placer	Old placer claim along Willow Creek	U.S. Bur. Mines, 1973; Chapin, 1918, p.62
110 North Creek	T.22-23N.,R.12E.	P	Au	Disseminated	Placer	Several placer claims along North Creek in alluvium too small to show on geologic map	Martin and Mertie, 1914, p. 278; U.S. Bur. Mines, 1973
111 Albert Creek	T.22N.,R.11-12E.	M	Au(Pt)	Disseminated	Placer	Also included several other claims along Albert Creek in alluvium too small to show on geologic map. Old Albert Creek placer produced about 150 oz gold during 1914 (Chapin, 1918). This is the only placer deposit in quadrangle with proven, though minor, production	Chapin, 1918, p. 59-62; Martin, 1920, p. 23; Cobb, 1972; U.S. Bur. Mines, 1973; Cobb, 1973, p. 29
112	T.22N.,R.11E.	O	Zeolites	Disseminated	Diagenic and metamorphic	In Horn Mountains and Albert Creek region, extensive deposits of mordenite and other zeolites of possible economic interest; localized in tuffaceous part of Lower Jurassic Talkeetna Formation. Similar deposits probably occur elsewhere in Talkeetna Mountains quadrangle	Hawkins, 1976; MacKevett and Holloway, 1977
113 McDougal Creek	T.22N.,R.11E.	P	Au	Disseminated	Placer	Several placer claims along McDougal Creek in alluvium too small to show on geologic map	U.S. Bur. Mines, 1973

Table 3. (continued)

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