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# Regional geologic summary, metallogenesis, and mineral resources of southeastern Alaska

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# Regional geologic summary, metallogenesis, and mineral resources of southeastern Alaska

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## ABSTRACT

Southeastern Alaska's half-billion year geological record features deposition of marine and continental sedimentary strata, eruptions of compositionally varied marine and subaerial volcanic rocks, and repeated episodes of folding, faulting, metamorphism, and igneous intrusion. Its geological complexity is matched by an equally long record of deposition and local redeposition of metallic mineral deposits in a variety of metallogenic environments, and which host more than a dozen valuable mineral commodities.

The oldest stratified rocks known in southeastern Alaska comprise an undated metamorphic complex intruded by isotopically dated diorite orthogneiss more than 500 million years old (G. E. Gehrels, pers. commun., 1984). The metamorphic complex is in fault contact with a deformed, but less metamorphosed, Ordovician or Silurian marine sedimentary and volcanoplutonic complex that in turn is overlain with marked unconformity by Devonian and younger Paleozoic marine sedimentary and volcanic strata that exhibit a wide range in composition and complex facies relations. Mesozoic strata are marine and mainly consist of (a) Upper Triassic complexly intertonguing conglomerate, sandstone, carbonaceous shale and siltstone, basalt, and rhyolite; and (b) Upper Jurassic to mid-Cretaceous intertonguing flysch and basaltic andesite. Cenozoic strata consist of nonmarine and shallow-marine coal-bearing clastic sedimentary rocks deposited in Early Tertiary time in fault-bounded intermontane basins mainly in the central part of southeastern Alaska. This predominantly continental sedimentary sequence partly intertongues with, but mainly is overlain by, subaerial andesite, basalt, and rhyolite lava flows and tuff. The youngest consolidated rocks known in southeastern Alaska are Quaternary basalt, andesite, and dacite lava flows, tuff, and agglomerate erupted from volcanoes and possibly other vents mainly in the southern and central parts of the Panhandle.

Isotopic dating of many of southeastern Alaska's compositionally and texturally diverse intrusive rocks suggests emplacement of: Cambro-Ordovician diorite; a Silurian or Ordovician felsic to mafic calcalkaline batholithic complex; Pennsylvanian or Permian syenite stocks; a Triassic granodiorite batholith; Jurassic peralkaline granite and tonalite stocks; Cretaceous granodiorite, diorite, and gabbro stocks and batholiths, and concentrically-zoned mafic-ultramafic intrusive complexes; Cretaceous or Early Tertiary tonalite and granodiorite sills, stocks, and batholiths; Eocene quartz monzonite and granodiorite batholiths; Eocene or Oligocene layered mafic-ultramafic intrusions; Oligocene or Miocene calcalkaline granite, granite porphyry, and olivine gabbro stocks; and swarms of Oligocene or younger lamprophyre and rhyolite dikes.

The more than 1,500 metallic mineral deposits known in southeastern Alaska are classified into nine "deposit model" types, based primarily on their geological characteristics. The types are: base- or precious metal-bearing fissure or replacement veins; massive sulfide; disseminated sulfide; porphyry; skarn; magmatic uranium-thorium or rare-earth element; magmatic oxide or

sulfide; rare-earth-bearing veins; and sandstone-hosted uranium. The deposits range in age from stratiform massive sulfide deposits hosted by pre-Ordovician metavolcanic rocks in the oldest strata known in the Panhandle, to auriferous quartz fissure veins deposited in Cenozoic faults. Important stratiform volcanic- or sediment-hosted base- and precious-metal-bearing massive sulfide deposits also occur in the Silurian or Ordovician, Permian, Permo-Triassic, and Upper Triassic strata; cobalt, copper, iron, nickel, and platinum-group metals occur in the Upper Mesozoic and Cenozoic mafic-ultramafic intrusions; uranium has been mined from the Jurassic peralkaline granite, and base and precious metals from skarns associated with the Silurian or Ordovician, Triassic, Cretaceous, and Eocene intrusions; and one of the world's largest porphyry molybdenum deposits is in an Oligocene granite porphyry stock.

Metallic minerals worth more than $2.5 billion at current (1984) prices have been mined to date in southeastern Alaska, mainly from the fabled gold quartz veins in the Juneau and Chichagof districts. Other deposits have produced smaller amounts of ore containing barite, copper, lead, silver, palladium-platinum, uranium, and zinc. In addition, $16 billion in cumulative metallic resources have been blocked out at the Quartz Hill porphyry molybdenum deposit ($15.1 billion) and at the Greens Creek stratiform polymetallic massive sulfide deposit ($700 million in combined metals). Significant additional resources of base or precious metals also are reported in many of the Panhandle's other stratiform, skarn, porphyry, magmatic segregation, and vein deposits.

One-hundred-seventy-one mineral assessment tracts in southeastern Alaska are evaluated for undiscovered additional metallic mineral resources contained in the nine types of deposits. The tracts are defined mainly by their geology and by the distribution and metallogenesis of the known deposits, and are ranked subjectively according to three levels of relative favorability. Seventy-three of the tracts are judged favorable for additional resources in one or more types of deposits; forty are judged probably favorable for such additional resources; and fifty-eight are judged possibly favorable.

# INTRODUCTION

The purpose of this report is to describe the origin, history, distribution, and geological controls (metallogenesis) of the types of metallic mineral deposits known in southeastern Alaska, and to predict its geological potential for mineral resources in those deposits (mineral resource assessment).

The report is based on published or otherwise publicly available information about more than 1,500 mineral deposits in southeastern Alaska (Appendix). Public information about the geological characteristics of these deposits ranges from relatively abundant in the case of deposits that have been mined or extensively explored, to relatively slight in the case of deposits that have been only cursorily prospected.

## Methodology

### Classification of deposits, metallogenesis, mineral resource assessment

Classification: The deposits for which there is enough public information to classify fall into nine genetic categories (mineral deposit models) based on such geological factors as ore and gangue minerals, hostrocks, and ore controls. The categories include epigenetic fissure or replacement veins and skarn deposits; and syngenetic massive sulfide deposits, magmatic deposits, porphyry deposits, and sedimentary deposits.

Metallogenesis: Metallogenesis of the classified deposits is inferred from their age of formation and subsequent history, combined with their local and regional geological setting. The metallogenesis of the deposits combined with the geological history of southeastern Alaska, in turn, show that the Panhandle has had a long and complex metallogenic history comprising numerous episodes of ore deposition, including metamorphic remobilization and redistribution of some of the deposits. The stratigraphic and structural controls of ore deposition show that this history began in pre-Ordovician time and probably has continued intermittently through much of Tertiary and possibly Quaternary time (table 1).

Resource assessment: The mineral resource assessment is based on the distribution and metallogenesis of the classified deposits. It features individual sets of assessment criteria that relate the specific types of deposits to geologic terrains (mineral assessment tracts), and uses the distribution and metallogenesis to predict the relative favorability of the tracts for undiscovered additional mineral resources contained in those types of deposits. Plate 1, for example, shows 171 numbered mineral assessment tracts and predicts their favorability for the nine types of mineral deposits at three relative levels of geologic favorability. In general, the favorable tracts are known to contain occurrences of their specified types of deposits, and are underlain by geologic units metallogenically favorable for such types of deposits; probably (moderately) favorable tracts contain unverified occurrences of their specified types of deposits and are underlain by metallogenically favorable rock units; and possibly favorable tracts host few or no known mineral deposits, but are underlain by geologic units correlative or continuous with those hosting the specified types of deposits in neighboring or included tracts.

Most tracts shown on plate 1 are judged for their relative potential for one type of deposit. Tracts containing more than one type of deposit have not been subdivided because (a) the individual resource assessment tracts are too small to show at the scale of the map, or (b) the geology is not known in enough detail to distinguish individual geologic/metallogenic map units. The assessment criteria for relative favorability of multi-deposit-type tracts are the same as for single-deposit-type tracts.

## Organization of the report

The principal focus of this report is plate 1, which shows the classification of mineral deposits known in southeastern Alaska and the distribution of mineral assessment tracts, and provides the basis for an interpretation of regional metallogenesis by depicting these data on a geological map. Plate 1 is based on summary descriptions of the individual mineral deposits in the Appendix, and on discussions in the text that classify the deposits, summarize their metallogenesis, and define and apply criteria for estimating the potential for specified types of deposits in geological tracts at three levels of relative favorability.

In the text, the 171 numbered mineral assessment tracts on plate 1 are described according to the types of deposits they contain. For example, tracts containing epigenetic base- or precious-metal veins are described first, then those containing massive sulfide deposits, disseminated sulfide deposits, porphyry deposits, skarn deposits, etc. Because there thus are no tract-by-tract descriptions, table 2 provides an index of the 171 numbered tracts and the corresponding pages in the text that describe them.

Areas on plate 1 not included in any mineral assessment tracts contain insufficient public data to define and rank individual tracts containing metallic mineral resources.

## Acknowledgements

This report is mainly the culminating result of nearly 30 years of my own geologic mapping and mineral resource investigations for the U.S. Geological Survey (USGS) in southeastern Alaska, supplemented significantly by reports published by other geologists who have described the rocks and mineral deposits in the Panhandle, and by unpublished relevant data generously provided by colleagues in the USGS, in the mineral industry, and in academe. For their unique personal and professional support, I gratefully acknowledge the following persons: Allen L. Clark, who taught me effective reconnaissance methods for geologic mapping, and who showed me that "ordinary-looking" rocks might be mineral deposits; the late Edward H. Cobb, for his painstaking and up-to-date compilations of published information about the mineral deposits in southeastern Alaska that are the basis for the Appendix in this report; John E. Decker, for assembling and compiling background information on regional aeromagnetic, mineral deposit, and geologic maps during the early stages of preparation of this report; George E. Gehrels, who permitted me to use his unpublished geologic mapping on southern Prince of Wales Island, and who, with outstanding skill and dedication, compiled the geologic map that is the foundation of this report; Donald Grybeck, for his collaboration on field studies of many mineral deposits in southeastern Alaska, for stimulating and thought-provoking discussions of ore deposit classification and metallogenesis, and for his patience and guidance at many critical points during the preparation of this report; David L. Jones, for sharing his inspiring imagination and insight about the stratigraphy and tectonic history of southeastern Alaska; William C. McClelland, for drafting the geologic map and the symbols on the map showing classification of mineral deposits; Edward M. MacKevett, Jr., for teaching me the practical aspects of mapping and evaluating mineral deposits; Rainer J. Newberry, for his guidance and assistance in classifying skarn deposits in southeastern Alaska; and Jason B. Saleeby, for sharing with me his geological "karma"--a feeling for rocks and rock processes, and an uncanny ability to distil elegance and order from apparent chaos.

## SUMMARY OF RESULTS

The following summaries of regional bedrock geology, metallogenesis, and mineral resources of southeastern Alaska highlight the principal conclusions of this report.

### Regional geologic summary

Southeastern Alaska is an approximately 52,000 square mile area of intensely glaciated, heavily forested mountains that rise abruptly to 3,000 feet or more from a complex system of deep fiords and inland marine waterways. It is underlain by an exceedingly complex and heterogeneous assemblage of bedrocks, and is cut by an intricate network of crustal fractures and faults (plate 1; Gehrels and Berg, in press), some of which are active.

Stratified rocks. The oldest rocks known in the region are intensely deformed and metamorphosed rhyolitic to basaltic marine lava flows and carbonate and clastic sedimantary rocks cut by igneous intrusions emplaced in Ordovician or Cambrian time. This pre-Ordovician metamorphic complex crops out in the southern part of the Panhandle, where it is in structural contact with a sequence of deformed, but relatively unmetamorphosed marine felsic to mafic volcanic rocks and diverse sedimentary rocks of Ordovician or Silurian age. In unconformable contact with the Ordovician-Silurian rocks are relatively undeformed younger Paleozoic marine strata, mainly comprising graywacke turbidite and limestone turbidite, carbonate, conglomerate, and felsic to mafic lava flows and tuff, that crop out mainly on Prince of Wales, Kuiu, and eastern Chichagof Islands, and in the Glacier Bay area. The most widely distributed of these Paleozoic strata are of Devonian or Silurian age, whereas those of Mississippian, Pennsylvanian, or Permian age crop out only in a few areas.

The oldest Mesozoic strata known in southeastern Alaska are Upper Triassic marine rhyolite and basalt, carbonate, and carbonaceous clastic rocks that unconformably overlie the Paleozoic rocks. The Triassic strata are moderately deformed and variably metamorphosed, and crop out discontinuously on islands along the axis of the Panhandle. Overlying the Triassic strata with marked erosional but moderate structural discordance is a sequence of Upper Jurassic to mid-Cretaceous flysch and basaltic andesite. These Upper Mesozoic strata flank the Triassic rocks on the east and form a northwest-trending belt that crops out discontinuously for the length of southeastern Alaska. The rocks are marked by complex deformation and metamorphism that increases from greenschist to amphibolite grade eastward across the belt. A second belt of Upper Mesozoic strata, mainly of tectonically disrupted flysch and basalt, crops out on the islands and coastal mainland in the northwestern part of the archipelago.

Tertiary strata in southeastern Alaska comprise a sequence mainly of nonmarine, locally coal-bearing clastic sedimentary rocks, overlain by up to thousands of feet of andesite, basalt, and rhyolite lava flows, tuff, and agglomerate. The sequence apparently was deposited in fault-bounded intermontane basins in Eocene and younger Tertiary time, and crops out mainly on Admiralty, Kuiu-Kupreanof, and Zarembo Islands.

The youngest consolidated rocks known in southeastern Alaska are Quaternary dacite, andesite, and basalt lava flows, breccia, and tuff erupted

from volcanoes or other vents on Kruzof, Kuiu-Kupreanof, and Revillagigedo Islands, and on the mainland east of Ketchikan. Although none of the volcanoes is known to have been active in historic time, local unconsolidated surficial deposits of interbedded ash and fluvioglacial detritus indicate that there have been volcanic eruptions during the past 10,000 years. One basalt flow on the mainland east of Wrangell has been isotopically dated at about 360 years (Elliott and others, 1981).

Areas of southeastern Alaska underlain by tectonically disrupted strata are on Kupreanof and Zarembo Islands, where Cretaceous to Devonian bedded rocks were complexly faulted in Late Mesozoic or Cenozoic time; and on Baranof and western Chichagof Islands and the mainland north of Cross Sound, where deformation in mid-Cretaceous time produced a melange containing tectonic blocks of Mesozoic and older rocks. A metamorphic complex that crops out on the mainland for the length of southeastern Alaska consists of schist, paragneiss, marble, amphibolite, and ultramafic rocks that form roof pendants and xenoliths in the Coast Range batholith. The rocks in the complex apparently were metamorphosed in Early Tertiary time, but their premetamorphic age is unknown.

Intrusive rocks. About half of the outcrop area of southeastern Alaska consists of intrusive igneous rocks. Those that have been isotopically dated apparently were emplaced at several intervals throughout its geologic history. The Paleozoic intrusions, for example, include Ordovician or Cambrian diorite orthogeneiss on southern Prince of Wales Island; Silurian or Ordovician complexes of diorite, trondhjemite, syenite, gabbro, and ultramafic rocks on southern Prince of Wales Island and eastern Chichagof Island; and Permian or Pennsylvanian syenite on southern Prince of Wales and Sukkwan Islands.

Isotopically-dated Mesozoic intrusions consist of Triassic granodiorite near Hyder; Jurassic peralkaline granite on southern Prince of Wales Island and tonalite on Chichagof and Baranof Islands; Cretaceous or Jurassic gabbro on Duke Island and diorite near Ketchikan and Juneau; Cretaceous zoned ultramafic complexes that crop out in a discontinuous belt for the length of southeastern Alaska; and up to batholith-size bodies of Cretaceous granodiorite, diorite, quartz diorite, tonalite, and gabbro that crop out throughout the Panhandle.

The largest Cenozoic intrusive complex in southeastern Alaska comprises tonalite, granodiorite, and quartz monzonite of the Coast Range Batholith, which was emplaced along the mainland mainly in Early Tertiary time. Other Early Tertiary intrusions include granodiorite, granite, tonalite, and quartz diorite plugs, stocks, and batholiths on Baranof and Chichagof Islands and in the Glacier Bay area; and layered mafic-ultramafic complexes on Yakobi and northwestern Chichagof Island and on the mainland northwest of Cross Sound. Younger Cenozoic intrusions include Miocene or Oligocene granite and granite porphyry stocks, and swarms of mafic and felsic dikes on the mainland from east of Wrangell to east of Ketchikan, and on Kuiu, Kupreanof, Zarembo, and Etolin Islands.

Faults. On plate 1, the most conspicuous structural features, and perhaps those of greatest metallogenic and mineral resource significance (Twenhofel and Sainsbury, 1958; this report, p. 34-36) are the great crustal fault zones and probably fault-controlled topographic lineaments that appear to cut the bedrock of the Panhandle into a great jigsaw pattern. Not shown on plate 1, but probably at least locally of comparable metallogenic and resource importance (Hudson and others, 1979, p. 1820), are myriads of joints, some of which also appear to extend to great crustal depth (Smith, 1973).

Most of the major faults within the Southeastern Alaska panhandle are marked by deep fiords or alluvium-floored flacial valleys. On the west it is truncated at the North American continental margin by the great Fairweather fault system. The linear trends of many of the faults suggest that they dip steeply or are vertical, at least near the surface of the crust, but the age of fault movement, or the amount of relative or absolute displacement of only a few of them has been conclusively determined. The Fairweather fault, for example, is known from marine and onshore geophysical and geological studies to be an active, mainly right-lateral strike-slip fault at the latitude of southeastern Alaska; its maximum age is probably Early Tertiary (Loney and others, 1975, p. 71-72). The fault along Chatham Strait and Lynn Canal apparently truncates and dextrally offsets rocks as young as Lower or mid-Tertiary a distance of about 120 miles (Lathram, 1964); seismic studies indicate continuing slight movement on parts of this fault (Loney and others, 1975, p. 70), but its maximum age of movement is not known.

Certain other features of several of the faults provide rough constraints on the minimum, but not maximum, age of their activity. For example, thermal springs in or near faults or topographic lineaments along Chatham Strait, Behm Canal, Tenakee Inlet, Peril Strait, and near the mouth of the Stikine River (Waring, 1917) suggest that these faults at least locally are conduits for active circulation of hydrothermal solutions; and a cluster of Pleistocene or Holocene volcanoes has erupted along and near Behm Canal east of Ketchikan.

## Metallogenesis

In this report, the term "metallogenesis" refers to the origin, history, and regional geologic and structural controls of the nine types of metallic mineral deposits that I have interpreted in southeastern Alaska. A "metallogenic province" is a geological terrane characterized by one or more types of mineral deposits.

Southeastern Alaska's half-billion year geologic record of marine and continental sedimentation and compositionally varied volcanism, punctuated by repeated episodes of folding, faulting, metamorphism, and igneous intrusion, is paralleled by its complex history of ore deposition and redeposition and by its diversity of mineral deposits and commodities (table 1). Although few of the deposits have been dated by isotopic or other direct methods, the depositional ages of many of the syngenetic deposits can be inferred from the ages of their hostrocks. The stratiform or stratabound deposits, for example, are essentially contemporaneous with their enclosing strata, whereas the magmatic and porphyry deposits formed before or during crystallization or cooling of the intrusions that host them.

The age of formation of an epigenetic deposit is inferred from less direct geologic evidence. A skarn or contact-metamorphic deposit, for example, can be dated if the age of the related intrusion is known. The age of a fissure or replacement vein, on the other hand, must be inferred from what is commonly a largely speculative history of the complex geologic processes--faulting, metamorphism, or igneous intrusion--that presumably produced the vein.

TABLE 1. Summary of metallogenesis in southeastern Alaska

| Age of deposit[1] | Type of deposit[2] | Commodities (underlined if significant production or considered resources) | Host rocks (see also map unit on Plate 1) | Ore controls: stratigraphic | Ore controls: structural, other | Examples of deposits described in appendix: quadrangle (deposit no.) | Examples of tracts on Plate 1 |
|---|---|---|---|---|---|---|---|
| CENOZOIC (Cz) TERTIARY (T) Quat. | | | | | | | |
| Pliocene | | | | | | | |
| Miocene | VS | Ag, Au, Cu, Pb, W, Zn<br>REE | Mz, Pz stratified rocks, Mz or Up Pz metaplutonic rocks (mainly rel. REE)-bearing and alkaline rocks ($SiO_2$, $SO_4$) | | S faults, pos. sedimentary & major fault zones<br>S faults, dikes | Stewart (32, 33, 34); Ketchikan (32); Bradfield Canal (32)<br>Petersburg (33–36) | 3, 5, 7, 15, 17<br>169 |
| Oligocene | PORP Mo<br>Mo | Mo<br>Ag, Au, Cu, Mo, Sn, Zn | Oligocene granite porphyry stock ($T_{gp}$)<br>Paleozoic carbonate strata (PO$_{Sv}$, DSv) | Carbonate strata | Contacts of Tertiary intrusions ($T_{gd}$) | Ketchikan (105)<br>Mt. Fairweather (21, 27, 30) | 69<br>105, 107 |
| Eocene | MOE<br>PORP Cu-Mo | Cu, Co, Ni, PGM<br>V<br>C, Fe<br>Ag, Au, C, Mo | Mz layered mafic-ultramafic intrusions ($T_{gb}$)<br>Mz metamorphic-mantle porphyritic rocks ($T_{gl}$)<br>Mz-Tertiary mafic pyroxenite rocks (Kgx)<br>K or T granite monzonite porphyry stocks (Kg, $T_{gd}$) | Stratiform or stratabound magmatic segregations<br>Carbonaceous or pyritic strata<br>Metacarbonate strata | Segregations near base or in specific layers in intrusions<br>Contact zone in and parallel to granodiorite ($T_g$, $T_{gd}$)<br>Cupolas or roof zones of Tertiary intrusions | Mt. Fairweather (30); Sitka (2, 3, 26)<br>Petersburg (1, 34)<br>Bradfield Canal (46–48)<br>Mt. Fairweather (28), Skagway (2) | 144, 145, 146<br>169<br>103<br>66, 67 |
| Paleo. | | | | | | | |
| CRET. (K) | MOE<br>PORP Mo<br>DB | Mo<br>Ni, Cu, Ag, Au, PGM, Co, Cu, Ni<br>Cr, Ag, Au, Mo, W<br>Ag, Au, Cu, Pb, Zn | Cretaceous granodiorite (Kg)<br>Up Mz mafic-ultramafic intrusions, Zoned complexes and pipes (Kum)<br>Pz carbonate strata (DSc, PSc, gmarc)<br>Jur or Cret bimodal andesite flows and tuff (KJv, KJvs) | Stratiform or stratabound magmatic segregations<br>Carbonate and intracarbonate strata<br>Submarine metabasalt and volcaniclastic strata | Segregations in concentric zones or in keels of pipes<br>Contacts of K intrusions (Kg, Kd) | Craig (49–46)<br>Prince Rupert (6–18), Craig (60), Juneau (132)<br>Mt. Fairweather (44, 52, 118); Craig (41, 47; 111)<br>Ketchikan (33, 40a, 40), Juneau (124) | 70<br>140, 141, 144<br>70, 102, 108–110<br>7, 8, 9, 62 |
| JUR. (J) | WMR | Ta, V<br>Ag, Au, W | Jur. Taku Mountain porphyritic granite (Jgr)<br>Upper Mz or older Bench and andesite (JPz) | Calcareous strata | Contacts of Jurassic (Jgr) and Triassic (J) intrusions | Bradfield Canal (53, Cu)<br>Juneau Entrance (30–32) | 17<br>130 |
| TRIAS (Tr) | VM, MS<br>DB<br>SM, MR | Ag, Au, W<br>Ag, Au, Cu, Pb, Zn<br>Ag Au, Cu, Pb, Zn | Up Pz volcanic and sedimentary rocks (Pz, Pzs)<br>Pz metabasalt<br>Mz-Up Pz metasedimentary/metavolcanic rocks (sPz, kPz, KPzv) | Shale volcanic and carbonaceous sedimentary strata<br>Subaerial basalt flows<br>Pyritic/graphitic metaclastic strata; skarn and pegmatite | | Skagway (28), Juneau (124), Petersburg (1, 38a), Ketchikan (106)<br>Sitka (30)<br>Juneau (81); Petersburg (34); Ketchikan (34, 83, 104) | 11, 81, 88, 89, 82<br>80<br>14, 86–98, 100 |
| PALEOZOIC (Pz) PERMIAN (P) | VM | Ag, Au, Cu, Zn | Permian(?) andesite (Pvum) | Andesitic flows and tuff | | Mt. Fairweather (111) | 88 |
| PENN. (P) | | | | | | | |
| MISS. (M) | | | | | | | |
| DEVONIAN (D) | | | | | | | |
| SILURIAN (S) | VM, MS | Ag, Au, Cu, Zn<br>Ag, Au, Cu, Fe | S-O or pO volcaniplutonic complexes (JOv, SOg, pOmg)<br>S-O ophiolitic metabasalt and mafic/intermed. intrusive rocks (SO, So) | Felsic/intermed. volcanic/volcaniclastic/metasedimentary strata<br>Mafic carbonate strata | Contacts of Silurian or Ordovician intrusions (SOg) | Craig (102, 103); Juneau Entrance (64–72)<br>Craig (73, 74) | 90, 92, 94<br>101 |
| ORDO. (O) | | | | | | | |
| pre-ORDO (pO) | | | | | | | |

[1] Vertical dashes indicate inferred range in age of deposition of deposits, vertical dots connect inferred polygenetic deposits

[2] Type of deposit: V, epigenetic base- or precious metal-bearing vein; VM, volcanic-hosted massive sulfide deposit; SM, sediment-hosted massive sulfide deposit; D, disseminated sulfide deposit; PORP Mo, porphyry molybdenum deposit; PORP Cu-Mo, porphyry copper-molybdenum deposit; S, skarn deposit; MOE, magmatic uranium-thorium or rare-earth element deposit; MOS, magmatic oxide or sulfide deposit; VR, rare-earth element-bearing vein; SU, sandstone-hosted uranium deposit

The oldest mineral deposits known in southeastern Alaska are contemporaneous with the oldest strata known in the Panhandle. They occur on southern Prince of Wales Island, and consist of Ag-, Au-, Cu-, and Zn-bearing stratiform massive sulfide deposits hosted both by pre-Ordovician metamorphosed silicic volcanic rocks and by less-metamorphosed Ordovician or Silurian silicic-intermediate volcanic rocks and interbedded clastic sedimentary rocks. On plate 1, this metallogenic province specifically comprises mineral assessment tracts no. 89-95, and more speculatively encompasses tracts no. 25, 26, 35, 36, and 59.

The Ordovician-Silurian rocks on Prince of Wales Island also host Ag-Au-Cu-Fe skarn deposits. The deposits are near Kasaan on the east side of the island and are localized in carbonate beds at or near the contacts of Ordovician or Silurian intermediate-mafic volcanic and intrusive rocks. This subdivision of the Ordovician-Silurian metallogenic province on Prince of Wales Island is tract no. 101 on plate 1.

A syngenetic massive sulfide deposit apparently hosted by Permian volcanic rocks is in the Glacier Bay area, where stratiform Ag-Au-Cu-Zn deposits occur in Permian(?) andesite flows and tuff. The geologic map (plate 1) suggests that these rocks may actually constitute part or all of a tectonic block in a unit of Cretaceous melange.

Significant stratiform massive sulfide deposits containing Ag, Au, barite, Cu, Pb, and Zn occur in Upper Triassic silicic-intermediate volcanic rocks and intertonguing carbonaceous clastic sedimentary rocks that crop out discontinuously for the length of southeastern Alaska (Berg and Grybeck, 1980). This Upper Triassic metallogenic province herein is interpreted to include the Greens Creek deposit on Admiralty Island, one at Glacier Creek northwest of Haines, one containing Upper Triassic fossils on Kupreanof Island, and several others on Zarembo, Gravina, and Annette Islands. On plate 1, the province incorporates mineral assessment tracts no. 10-13, 50, and 81-87, and more speculatively, nos. 24, 48, and an unnumbered tract on Zarembo Island.

Probably Triassic subaerial basalt flows on western Chichagof Island contain disseminated copper minerals. These volcanic-hosted stratabound deposits form a second Triassic metallogenic province in southeastern Alaska that on plate 1 consists of tracts nos. 60 and 61.

Metamorphosed stratiform massive sulfide deposits occur in a belt of metamorphosed sedimentary and volcanic rocks that crops out on the mainland and on adjacent islands for nearly the length of southeastern Alaska. The deposits and hostrocks probably were metamorphosed in Cretaceous and possibly Tertiary time, but their premetamorphic age has not yet been conclusively determined. In this report, their depositional age is inferred to be Permo-Triassic, based on scattered occurrences of Permian and Middle or Upper Triassic fossils near some of the deposits. The deposits contain Ag, Au, Cu, Pb, and Zn, and mainly occur in metamorphosed sedimentary strata such as pyritic and graphitic metaflysch or pelitic schist and paragneiss, and only locally are accompanied by relatively minor felsic, intermediate, or mafic metavolcanic rocks. On plate 1, this possibly Permo-Triassic mainly sediment-hosted massive sulfide metallogenic province contains mineral assessment

tracts nos. 14, 15, and 96-100, and more speculatively incorporates tracts nos. 28, 33, and 45.

Ag-, Au,- and W-bearing skarn deposits near Hyder occur in Lower Mesozoic or older sedimentary and volcanic strata intruded by Triassic granodiorite and by Eocene quartz monzonite and granodiorite. The age of the deposits has not been determined by isotopic methods. In this report, they are interpreted to have originated at the time of intrusion of the Triassic granodiorite, and to have been at least partly mobilized and redeposited during emplacement of the Eocene intrusions. A metallogenic province of such possibly polygenetic skarn deposits is suggested on plate 1 by Lower Mesozoic or older strata in tracts nos. 17, 51, 52, 56, and 58.

Magmatic U-Th deposits that have been the source of the only uranium ore mined in Alaska occur in Jurassic peralkaline granite on southern Prince of Wales Island, where the granite intrudes an Ordovician-Silurian intrusive complex that crops out principally in that area (plate 1). The apparently restricted ocurrence of the uranium deposits and their granite host suggests a genetic relation between them and the enclosing Ordovician-Silurian rocks.

Jurassic or Cretaceous basaltic andesite flows and tuff that crop out discontinuously along and near the mainland for most of the length of southeastern Alaska commonly contain disseminations and veinlets of pyrite and possibly other sulfide minerals, and locally have been prospected for Ag,Au, Cu, Pb, and Zn. The nearly ubiquitous distribution of the sulfide minerals suggests that they originated during eruption of their volcanic hostrocks, which subsequently were complexly metamorphosed and faulted in Late Mesozoic or Cenozoic time. The widely separated prospects, however, suggest that the relatively lean syngenetic sulfide deposits locally were mobilized, redeposited, and possibly upgraded during the metamorphism and faulting. Outcrop areas of these metavolcanic rocks herein are interpreted as a Jurassic-Cretaceous metallogenic province of stratabound volcanic-hosted disseminated sulfide deposits that locally have been upgraded during subsequent faulting and metamorphism. On plate 1, the province encompasses tracts numbers 7, 9, and 62, which contain the possibly upgraded deposits, and, more speculatively, tracts nos. 27, 34, and 63-65. It could also include outcrop areas of Jurassic or Cretaceous volcanic rocks not included in numbered tracts, but there is insufficient public information about their mineral potential to define and rank such tracts.

Magmatic segregation deposits of oxide or sulfide minerals, locally accompanied by trace amounts of gold, silver, or platinum-group metals, occur in Upper Mesozoic mafic-ultramafic intrusive complexes that crop out discontinuously for the length of southeastern Alaska. The complexes that have been isotopically dated are mainly of mid-Cretaceous age. Most of the complexes are more or less zoned concentrically outward compositionally in a sequence of dunite-peridotite-pyroxenite-hornblendite-gabbro, in which titanium-rich magnetite, subordinate chromite, and trace amounts of platinum-group metals occur mainly as stratiform or stratabound segregations in the peridotite or pyroxenite. One complex is a pipelike intrusion in which segregations of Co-, Cu-, and Ni-bearing sulfide minerals apparently are concentrated at or near its keel; and one complex containing Au, Ag, Cu, and Pd apparently does not fit either morphological type. On plate 1, these mafic-ultramafic intrusive complexes define an Upper Mesozoic metallogenic

province that encompasses mineral assessment tracts no. 139-143, 146-150, and 154, and several unnumbered tracts probably favorable for magmatic oxide or sulfide deposits near Haines, Juneau, Petersburg, and the northeast coast of Prince of Wales Island.

Skarn deposits near the contacts of Cretaceous mainly granodiorite intrusions occur in Devonian, Ordovician, or Silurian carbonate strata in the Glacier Bay and northwestern Prince of Wales Island areas, and in pre-Ordovician marble near Hydaburg on southern Prince of Wales Island. The deposits near Glacier Bay have been prospected for Ag, Au, Cu, Mo, and W; those on northwestern Prince of Wales Island for Cu, Mo, Pb, W, and Zn; and those near Hydaburg have produced significant amounts of Ag, Au, and Cu. The Cretaceous granodiorite intrusions on northwestern Prince of Wales Island also contains sparse disseminations of molybdenite.

Lower Tertiary layered intrusions of mafic and ultramafic igneous rocks containing magmatic segregation deposits of oxide or sulfide minerals occur on Yakobi and western Chichagof Islands, and on the mainland northwest of Cross Sound. The intrusions that have been isotopically dated are Eocene or Oligocene in age. They generally grade compositionally upward from mafic to less mafic rock types, or are rhythmically layered in sequences that also systematically increase upward in silica content. The deposits occur: as stratiform accumulations of relatively massive sulfide minerals containing Co, Cu, Ni, minor chromite or magnetite, and trace amounts of platinum-group metals; as small masses, veinlets, and disseminations of sulfide or oxide minerals hosted by certain compositional layers; or as crosscutting veins of sulfide minerals near the basal or outer contacts of the intrusions. On plate 1, layered mafic-ultramafic intrusions hosting these magmatic segregation deposits define a Lower Tertiary metallogenic province that encompasses tracts no. 144, 145, 151-153, and possibly 155.

Porphyry Cu-Mo deposits locally containing traces of gold or silver occur in Cretaceous or Tertiary quartz monzonite porphyry stocks in the Glacier Bay area. Intrusions containing porphyry deposits that have been isotopically dated apparently give mid-Cretaceous or Eocene-Oligocene ages, but too few of them have been dated to distinguish two such time-specific metallogenic provinces on plate 1. Instead, an undivided Cretaceous-Tertiary porphyry Cu-Mo province can be inferred that highlights tracts no. 66 and 67, and speculatively encompasses nos. 18-20, and 120.

Cu-Fe skarn deposits occur in undated marble and calcareous paragneiss roof pendants near the contacts of Eocene granodiorite of the Coast Range batholith on the mainland east of Wrangell and northeast of Ketchikan. A metallogenic province defined by the distribution of these deposits and of metacarbonate roof pendants in the Coast Range batholith large enough to show on plate 1 encompasses tracts no. 30, 113, and 122-129.

Skarn deposits occur sporadically in Devonian, Silurian, or Ordovician carbonate strata near the contacts of mid-Tertiary granitic intrusions in the Glacier Bay area. The deposits have been prospected mainly for Ag, Au, Cu, or Mo, and also contain trace amounts of Sn and Zn.

A porphyry molybdenum deposit in an Oligocene granite porphyry stock on the mainland northeast of Ketchikan contains very large resources of molybdenum

and currently (1984) is being developed as an open-pit mine. Eocene or Miocene-Oligocene granite intrusions elsewhere on the mainland that have been prospected mainly for molybdenum are near Skagway, along the International Boundary northeast of Juneau, northeast of Wrangell, and north of Ketchikan. The molybdenum-porphyry stock northeast of Ketchikan also contains trace amounts of radioactive minerals, and a Miocene or Oligocene granite stock east of Wrangell apparently has been prospected mainly for radioactive or rare-earth elements. Oligocene or Miocene granite intrusions giving anomalous geochemical values in molybdenum and other metals elsewhere associated with porphyry molybdenum deposits crop out or form shallow subcrops on Kuiu, Kupreanof, Zarembo, and Etolin Islands. On plate 1, a mid-Tertiary porphyry molybdenum metallogenic province on the mainland contains tracts no. 68, 69, 73, and 74, and more speculatively nos. 58 and 80. A speculative one covering the four islands comprises tracts no. 46, 47, and 78.

Lower or mid-Tertiary nonmarine, locally coalbearing clastic sedimentary rocks containing traces of uranium minerals crop out on Kuiu and Kupreanof Islands, and the same formation lacking publicly known occurrences of radioactive minerals crops out on Admiralty and Zarembo Islands. On plate 1, a largely speculative Tertiary sandstone-hosted uranium metallogenic province incorporates tracts no. 169, 170, and 171.

Epigenetic fissure or replacement veins are ubiquitous in southeastern Alaska. They occur singly, in sets, or in stockworks, sometimes as original components of massive sulfide, porphyry, skarn, or magmatic deposits, and sometimes apparently unrelated to any other types of deposits. In this report, veins that are original components of the other types of deposits are described with those deposits; veins that apparently are independent in origin from them are interpreted as a distinct class of deposits and described separately. In this report, these veins are divided into two groups based on their metallic mineral content. One group contains base or precious metals, and other contains radioactive or rare-earth elements.

Although preliminary Pb-isotopic studies of galena from a few deposits have been made by the U.S. Geological Survey (B. R. Doe, written commun. 1981), most epigenetic veins in southeastern Alaska have not been dated or otherwise investigated by isotopic or fluid-inclusion methods. In this report, their age and origin are inferred partly from isotopic studies of epigenetic veins in neighboring regions and partly from local or regional geologic processes such as faulting, metamorphism, and igneous intrusion. The richly productive precious-metal-bearing quartz fissure veins hosted by Cretaceous graywacke turbidite on western Chichagof Island, for example, herein are interpreted to be similar in age and origin to those in coastal southern Alaska (Mitchell and others, 1981), where isotopic studies show that auriferous quartz fissure veins in Cretaceous graywacke originated in Early Tertiary time, when metamorphic heating of meteoric water leached silica and gold from the volcanic-detritus-rich graywacke and deposited them in faults at relatively shallow crustal depth. The great quartz stockworks containing gold, silver, and basemetals at the Alaska-Juneau mine and elsewhere in the Juneau gold belt (Spencer, 1906), on the other hand, are hosted by volcanic and sedimentary rocks locally containing disseminations and masses of sulfide minerals. These sulfides may have been hydrothermally mobilized and redeposited as vein stockworks during Late Mesozoic or Tertiary metamorphism, faulting, and

igneous intrusion, a process fundamentally similar to the one that produced the veins on Chichagof Island.

Plate 1, combined with descriptions of deposits in the Appendix, shows that nearly all of the productive base- or precious metal-bearing fissure veins in southeastern Alaska are near major fault zones or probably fault-controlled topographic lineaments, or are localized in faults subsidiary to the major zones. This high degree of apparent structural control suggests that the great faults in the region, some of which have probably been active at least since Early Tertiary time, and their subsidiary strands, have played an important role in the origin and distribution of the epigenetic veins (Twenhofel and Sainsbury, 1958).

On plate 1, metallogenic provinces defined by significantly productive base-or precious metal-bearing fissure veins in or near major faults or topographic lineaments center on tracts nos. 1-4, 5, 6, 7, 9, 15, 17, 140, and the southeastern part of 86, and on unnumbered tracts in the northwestern part of Glacier Bay, west of Kasaan on central Prince of Wales Island, and near the east coast of Prince of Wales Island.

The distribution and structural characteristics of the epigenetic radioactive or rare-earth element-bearing veins known in southeastern Alaska suggest that they formed at about the same time as the base- or precious metal-bearing fissure veins. Their local fluorite content, however, coupled with other geochemical links to the region's Cenozoic felsic igneous rocks, suggest that they may have been deposited from late-magmatic hydrothermal solutions during crystallization or cooling of those rocks.

## Mineral resources

The following section summarizes the mineral resources and mineral production in southeastern Alaska first by specific types of deposits and then by mineral or metal commodity. Although a few of the listed commodities occur (or are reported) as the sole valuable constituent in some of the deposits, most occur in deposits accompanied by one or more of the other commodities.

Because public reports about occurrences, resources, or production of individual mineral commodities in southeastern Alaska may be biased by historical or commercial factors, the resource appraisals in this report are organized according to the geological characteristics of the specific types of deposits, and not by mineral commodities.

Types of deposits. Metallic minerals cumulatively worth more than $2.5 billion at current prices (Northern Miner, July 26, 1984, p. 13) have been mined to date from several of the types of deposits known in southeastern Alaska. An additional $16 billion in metallic mineral resources have been blocked out at the Quartz Hill porphyry molybdenum deposit ($15.1 billion in Mo) and the Greens Creek massive sulfide deposit ($700 million in combined Ag, Au, Cu, Pb, and Zn content) (Bundtzen and others, 1984).

Reported results of drilling or other exploration of several types of deposits in the Panhandle (Bundtzen and others, 1984, p. 12, 18-19, 43) suggest the following mineral resources:

(1) Epigenetic veins. Jualin (Juneau quadrangle, no. 24): about 96,000 tons containing 0.28 oz Au/ton, plus 11 million tons containing 0.11 oz Au/ton.

(2) Massive sulfide deposits. Greens Creek (Juneau quadrangle, no. 145a): 4 million tons containing 8-10% Zn, 2.5% Pb, 0.5% Cu, 10 oz Ag/ton, and 0.1 oz Au/ton; Sumdum (Sumdum quadrangle, nos. 13, 14): about 27 million tons containing 0.57% Cu, 0.37% Zn, and 0.3 oz Au/ton.

(3) Porphyry deposits. Quartz Hill (Ketchikan quadrangle, no. 105): 1.5 billion tons containing 0.136 % Mo; Nunatak (Mt. Fairweather quadrangle, no. 133): 8.5 million tons containing 0.125% Mo, plus 129 million tons containing 0.026% Mo.

(4) Skarn deposits. Kasaan Peninsula area (Craig quadrangle, nos. 73,74): 4 million tons containing 50% Fe and less than 2% Cu; Jumbo deposit (Craig quadrangle, no. 111): 650,000 tons containing about 45% Fe, 0.75% Cu, 0.01 oz Au/ton, and 0.08 oz Ag/ton.

(5) Magmatic oxide or sulfide segregations.

(A) Zoned mafic-ultramafic intrusions.

1. Klukwan deposit (Skagway quadrangle, nos. 67,68): 1.5 billion tons containing 11-20% Fe and 1.6-3.0% Ti.

2. Funter Bay ("Mertie lode") (Juneau quadrangle, no. 137): 560,000 tons containing 0.34% Ni, 0.35% Cu, and 0.15% Co.

3. Red Bluff Bay (Port Alexander quadrangle, no. 24): 570 tons containing 40% Cr, plus 29,000 tons containing 18-35% Cr.

(B) Layered mafic-ultramafic intrusions.

1. Brady Glacier (Mount Fairweather quadrangle, no. 39): 100 million tons containing 0.5% Ni, 0.3% Cu, and "significant" Co and Pt.

2. Bohemia Basin (Sitka quadrangle, nos. 2, 3): 22 million tons containing 0.33-0.51% Ni, 0.21-0.27% Cu, and 0.04% Co.

3. Mirror Harbor (Sitka quadrangle, no. 26): 8,000 tons containing 1.57% Ni and 0.88% Cu, plus "several million" tons containing 0.2% Ni and 0.1% Cu.

4. Snipe Bay (Port Alexander quadrangle, no. 25): 430,000 tons containing 0.3% Ni, 0.3% Cu, and 0.13 oz Ag/ton.

Commodities. Resources of more than a dozen metallic mineral commodities occur in the mineral deposits known in southeastern Alaska. In alphabetical order they are: antimony (Sb); barite (ba); chromite (Cr); cobalt (Co); copper (Cu); gold (Au); iron (Fe); lead (Pb); molybdenum (Mo); nickel (Ni); platinum-group metals (PGM); rare-earth elements (REE); silver (Ag); tungsten (W); uranium-thorium (U-Th); and zinc (Zn).

Antimony (Sb). Only a few widely scattered occurrences of antimony minerals are known in southeastern Alaska. They consist of stibnite veins in metacarbonate strata northwest of Ketchikan (Ketchikan quadrangle, no. 40); of native antimony in a fissure vein in metamorphic rocks southeast of Juneau (Sumdum quadrangle, no. 41); and of antimony-bearing sulfosalt minerals mainly reported in fissure or replacement veins near Hyder. Its geologic setting indicates that additional resources of antimony may occur in tracts on plate 1 favorable for epigenetic fissure vein deposits, but the apparent scarcity in southeastern Alaska of mineral deposits containing antimony minerals suggests that significant undiscovered resources are unlikely.

Barite (ba). All of the barite mined to date in Alaska has come from the

Upper Triassic stratiform deposit at Castle Island southwest of Petersburg (Petersburg quadrangle, no. 11), where about 850,000 tons of barite was mined between 1963 and 1980 (Bundtzen and others, 1984, p. 43). Significant additional resources in a stratiform deposit are reported at the Glacier Creek (Marmot) (Skagway quadrangle, no. 39) prospect northwest of Haines, and an occurrence of possibly stratiform massive barite in pre-Ordovician metacarbonate is at Lime Point on southwestern Prince of Wales Island (Craig quadrangle, no. 127). The distribution and geologic settings of the Castle Island and Glacier Creek deposits suggest that additional resources of barite may occur in tracts on plate 1 favorable for massive sulfide deposits, particularly those hosted by Upper Triassic felsic or intermediate volcanic rocks (table 1). The geologic setting of the Lime Point deposit suggests additional resources in tracts containing pre-Ordovician metacarbonate or Silurian or older felsic-intermediate volcanic and metavolcanic rocks.

Chromite (Cr). Chromite reported to date in southeastern Alaska occurs mainly as an accessory mineral in magmatic segregation deposits in mafic-ultramafic intrusions, and in tectonic blocks or in xenoliths of ultramafic rocks. The only deposit in which significant resources of chromite are reported is in an Upper Mesozoic zoned mafic-ultramafic intrusion at Red Bluff Bay on eastern Baranof Island (Bundtzen and others, 1984, p. 43). The distribution and geologic setting of chromite occurrences known in southeastern Alaska suggest that additional undiscovered resources are mainly in tracts on plate 1 favorable for magmatic segregation deposits in Cenozoic layered mafic-ultramafic intrusions, or in Upper Mesozoic zoned mafic-ultramafic intrusions.

Cobalt (Co). Cobalt reported to date in southeastern Alaska occurs mainly in trace amounts in Ni-, Cu-, and Fe-bearing sulfide minerals in magmatic segregation deposits in mafic-ultramafic intrusions (table 1). Significant resources, for example, are said to occur in Cenozoic layered intrusions at Brady Glacier west of Glacier Bay, and at Bohemia Basin on Yakobi Island, and in an Upper Mesozoic pipelike zoned(?) intrusion at the "Mertie lode" on northern Admiralty Island (Bundtzen and others, 1984, p. 43). The distribution and geologic setting of these occurrences suggest that additional resources of cobalt may occur in tracts on plate 1 favorable or probably favorable for magmatic segregation deposits in Cenozoic layered mafic-ultramafic intrusions, and apparently to a more limited extent in tracts favorable or probably favorable for such deposits in Upper Mesozoic zoned mafic-ultramafic intrusions.

Copper (Cu). Copper has been mined in significant amounts in southeastern Alaska mainly on southern Prince of Wales Island from skarn and stratiform massive sulfide deposits, and from a magmatic segregation deposit in a mafic-ultramafic intrusion (table 1). It also occurs throughout the Panhandle in many of the fissure veins, in the disseminated sulfide deposits and porphyry deposits, and in other magmatic segregation and stratiform massive sulfide deposits.

On southern Price of Wales Island, Ordovician-Silurian (Kasaan) and Cretaceous (Jumbo) skarn deposits have yielded an aggregate of about 40 million pounds of copper, pre-Ordovician stratiform massive sulfide deposits (Niblack, Khayyam) a total of about 8.5 million pounds, and an Upper Mesozoic magmatic segregation deposit (Salt Chuck) about 5 million pounds (Bundtzen and others, 1984, p. 43; Craig quadrangle, no. 103). A relatively small amount of copper

was recovered from a fissure or replacement vein near Hyder (Bradfield Canal quadrangle, no. 62).

The largest resources of copper measured to date in southeastern Alaska are in the Greens Creek stratiform massive sulfide deposit on Admiralty Island, where drilling and underground exploration indicate about 40 million pounds of copper (Bundtzen and others, 1984, p.18). Significant other resources of copper are reported (Bundtzen and others, 1984, p. 43) in stratiform massive sulfide deposits west of Haines (Glacier Creek/Marmot), south of Juneau (Sumdum, Tracy Arm), and southeast of Hydaburg (Copper City); in magmatic segregation deposits on Yakobi (Bohemia Basin), western Chichagof (Mirror Harbor), Baranof (Snipe Bay), and Admiralty (Mertie lode) Islands, and west of Glacier Bay (Brady Glacier); and in fissure or replacement veins near Hyder.

The distribution and geologic setting of the deposits that have produced copper, that contain significant measured or reliably reported resources, or that have been mapped during geologic investigations by the U.S. Geological Survey suggest that additional undiscovered resources of copper are likely in tracts on plate 1:

(a) favorable or probably favorable for stratiform massive sulfide deposits in pre-Ordovician, Silurian or Ordovician, Upper Triassic, and Permo-Triassic rocks;

(b) favorable or probably favorable for magmatic segregation deposits in Cenozoic pipelike or zoned mafic-ultramafic intrusions; and

(c) favorable for disseminated sulfide deposits in Upper Triassic subaerial basalt flows (table 1).

Gold (Au). Valued at current prices, more than $2 billion in gold was recovered from the legendary quartz veins near Juneau, and about $250 million from the veins on western Chichagof Island (Bundtzen and others, 1984). In addition, smaller amounts of gold were recovered from many other quartz fissure veins distributed throughout the Panhandle, and as a byproduct of other mining from several of the massive sulfide and skarn deposits (table 1). The largest resource of gold measured to date is in the Greens Creek Ag-Au-Cu-Pb-Zn massive sulfide deposit on Admiralty Island, in which the current $140 million value of the gold is equal to that of the combined value of the Ag, Cu, and Pb in the deposit (Bundtzen and others, 1984, p. 18; Northern Miner, July 26, 1984). The distribution of the productive deposits and of deposits containing measured or reportedly significant resources (Bundtzen and others, 1984, p. 43) suggests that additional undiscovered resources of gold in southeastern Alaska are mainly in tracts on plate 1 favorable for vein and massive sulfide deposits, and, to a less well-documented extent, in those favorable for disseminated sulfide, skarn, or porphyry Cu-Mo deposits (table 1).

Iron (Fe). Iron resources in southeastern Alaska consist mainly of magnetite in magmatic segregation and skarn deposits (table 1). The largest resources of iron reported to date in magmatic segregation deposits are in Upper Mesozoic zoned mafic-ultramafic intrusions at Klukwan, Snettisham, and Union Bay, and in skarn deposits on Kasaan Peninsula (Bundtzen and others, 1984, p. 43) and on the mainland southeast of Wrangell (MacKevett and Blake, 1963).

Other occurrences of magnetite in the zoned mafic-ultramafic intrusions have been prospected near Petersburg, and on Duke, southern Revillagigedo, Annette, and Blashke Islands. The distribution and geologic setting of the magnetite deposits that have been prospected or that reportedly contain significant resources of iron suggest that additional resources are mainly in tracts on plate 1 favorable or probably favorable for segregation deposits in Upper Mesozoic zoned mafic-ultramafic intrusions, and favorable for skarn deposits in Silurian or older bedded and intrusive rocks and in calcareous metamorphic roof pendants in the Coast Range batholith.

Lead (Pb). Lead, mainly in the mineral galena, occurs in many of the lode deposits known in southeastern Alaska, and important amounts locally have been mined from several types of deposits. For example, about 40 million pounds of lead were recovered as a byproduct from the auriferous quartz fissure veins at the Alaska-Juneau mine, 250,000 pounds were produced from polymetallic fissure or replacement veins near Hyder, and concentrates containing 42,000 lbs of lead were shipped from a stratiform Pb-Zn massive sulfide deposit on Revillagigedo Island near Ketchikan. By far the largest resource of lead measured in southeastern Alaska is in the Greens Creek stratiform polymetallic massive sulfide deposit on Admiralty Island, where extensive drilling and underground exploration have blocked out 4 million tons of ore containing 2.5% lead. Relatively small lead resources have been measured in stratiform lead-zinc deposits on Revillagigedo Island (Ketchikan quadrangle, nos. 76, 83), and significant resources are reported in other stratiform massive sulfide deposits at Glacier Creek (Marmot), Sumdum, Tracy Arm, Cornwallis Peninsula, Groundhog Basin, and Niblack, and in massive sulfide-bearing skarn near Hyder (Bundtzen and others, 1984, p. 43). The distribution of the deposits containing significant measured or reliably reported resources of lead suggests that additional undiscovered resources are mainly in tracts on plate 1 favorable or probably favorable for stratiform massive sulfide deposits.

Molybdenum (Mo). By far the largest resources of molybdenum known in southeastern Alaska are in the porphyry molybdenum deposit at Quartz Hill on the mainland east of Ketchikan, where a body of hypabyssal Oligocene granite porphyry containing more than 4 billion pounds of molybdenum has been blocked out by extensive drilling (Bundtzen and others, 1984, p. 19). Elsewhere in the Panhandle, significant resources of molybdenum are reported in a Tertiary quartz monzonite porphyry stock at the Nunatak Cu-Mo porphyry deposit in the Glacier Bay area, and traces of molybdenite occur in several other felsic intrusions of Tertiary or Cretaceous age. The distribution and geologic setting of deposits containing significant measured or reliably reported resources of molybdenum suggest that additional undiscovered resources are mainly in tracts on plate 1 favorable or probably favorable for porphyry deposits in Tertiary or Cretaceous felsic intrusions emplaced at relatively shallow crustal depth.

Nickel (Ni). Nickel in southeastern Alaska occurs mainly in Ni-, Cu-, and Fe-bearing sulfide minerals in magmatic segregation deposits in mafic-ultramafic intrusions (table 1). Significant resources of nickel are reported in Cenozoic layered mafic-ultramafic intrusions in coastal parts of the northern Panhandle at Brady Glacier, Bohemia Basin, Mirror Harbor, and Snipe Bay, and in an Upper Mesozoic pipelike zoned(?) mafic-ultramafic intrusion at the Mertie lode on northern Admiralty Island (Bundtzen and others, 1984, p. 43). Trace amounts of nickel also occur in many of the other mafic or ultramafic rocks in

southeastern Alaska. The distribution and geologic setting of deposits reported to contain significant resources of nickel suggest that additional undiscovered resources are mainly in tracts on plate 1 favorable or probably favorable for magmatic segregation deposits in Cenozoic layered mafic-ultramafic intrusions.

Platinum-group metals (PGM). The only lode deposit so far mined for platinum-group metals in southeastern Alaska is at the Salt Chuck deposit on east-central Prince of Wales Island, where about 20,000 ounces of palladium and subordinate platinum were recovered in 1900-1941 from pyroxenite and gabbro in a mafic-ultramafic intrusion (Bundtzen and others, 1984, p. 43). Trace amounts of platinum-group metals occur in many of the other mafic-ultramafic intrusions in the Panhandle, and platinum occurs along the coast northwest of Cross Sound in beach placers probably derived from neighboring Cenozoic layered mafic-ultramafic intrusions. The geologic setting of the Salt Chuck deposit and the occurrence of trace amounts of platinum-group metals in many of the other mafic-ultramafic intrusions suggest that additional lode resources of platinum-group metals are possible in tracts on plate 1 favorable for magmatic segregation deposits. The apparent uniqueness of the Salt Chuck deposit, and the proximity of the platinum-bearing placers to the Cenozoic layered mafic-ultramafic intrusions, enhance the favorability of the tracts containing the Cenozoic intrusions.

Rare-earth elements (REE). In southeastern Alaska, local concentrations of rare-earth element-bearing minerals, locally accompanied by radioactive minerals, are in felsic intrusions and in fissure veins (table 1). Concentrations known in felsic intrusions, for example, consist of late magmatic-hydrothermal allanite, parisite, xenotime, monazite, and other rare-earth minerals in and near a stock of Jurassic peralkaline granite on southern Prince of Wales Island; of eudialyte, a rare-earth-bearing accessory silicate mineral in a stock of Pennsylvanian or Permian syenite on southern Prince of Wales Island; and of niobian rutile crystals up to 5 inches long in Tertiary or Cretaceous pegmatite on central Admiralty Island.

The principal known occurrence of fissure veins containing rare-earth minerals is at Salmon Bay on northeastern Prince of Wales Island, where the veins cut Silurian graywacke; a minor occurrence is near the south end of the Island, where the veins are in andesite that intrudes Silurian or Ordovician syenite. In this report, the veins are interpreted to be Cenozoic in age.

Although nearly all felsic igneous rocks contain rare-earth element-bearing accessory minerals, the distribution of felsic intrusions containing magmatic or magmatic-hydrothermal concentrations of rare-earth-bearing minerals in southeastern Alaska suggests that additional undiscovered resources of rare-earth elements are mainly in tracts on plate 1 favorable or probably favorable for magmatic uranium-thorium or rare-earth element deposits. Additional resources in fissure veins are mainly in the tracts on Prince of Wales Island that contain the known deposits, and, to a less well-documented extent, in tracts containing outcrops of Cenozoic felsic igneous rocks.

Silver (Ag). In southeastern Alaska, silver has been recovered mainly as a by product of other mining from fissure veins and from massive sulfide and skarn deposits, and it also occurs in the disseminated sulfide, porphyry, and some of the magmatic segregation deposits (Table 1). The metal occurs in galena or

other sulfide minerals, in sulfosalt minerals, or in alloys with gold, or less commonly, platinum-group metals. By far, the largest past production of silver has been from quartz fissure veins in the Juneau and Chichagof districts, and the largest resource measured to date is in the Greens Creek deposit, which contains about 40 million ounces (Bundtzen and others, 1984, p. 18). The distribution and geologic settings of the productive deposits, and of deposits containing significant measured resources (Bundtzen and others, 1984), suggest that additional undiscovered resources of silver in southeastern Alaska are mainly in tracts on plate 1 favorable for vein and massive sulfide deposits, and, to a less well-documented extent, in those favorable for skarn and porphyry deposits.

Tungsten (W). The only production of tungsten recorded in southeastern Alaska was at the Riverside mine near Hyder, where about 3500 units (70,000 lbs) of $WO_3$ were recovered in 1925-1951 from scheelite-bearing fissure or replacement veins cutting granodiorite (Bradfield Canal, no. 62). Tungsten also occurs in scheelite-bearing skarn deposits mainly associated with Triassic or Eocene intrusions near Hyder, with Cretaceous intrusions on northern Prince of Wales Island (table 1) and in scheelite-bearing auriferous fissure veins in a Cretaceous intrusion on northwestern Chichagof Island (Apex-El Nido: Sitka quadrangle, no. 15). Traces of tungsten are reported in samples from some of the contact metamorphic aureoles in the Glacier Bay area. The distribution and geologic settings of the productive deposit near Hyder, and of the other occurrences of tungsten-bearing minerals known in southeastern Alaska suggest that additional undiscovered resources of tungsten are mainly in tracts on plate 1 favorable or probably favorable for skarn deposits in Mesozoic or older strata cut by Triassic or Eocene intrusions, and in Paleozoic carbonate cut by Cretaceous or Tertiary intrusions on northwestern Prince of Wales Island and in the Glacier Bay area. "Significant" resources of tungsten are reported in the auriferous fissure veins at the Apex-El Nido deposit on northwestern Chichagof Island (Bundtzen and others, 1984, p. 43).

Uranium-thorium (U-Th). The only mineral deposit in Alaska that has been mined for radioactive minerals is at Bokan Mountain on southern Prince of Wales Island (Dixon Entrance quadrangle, nos. 30-32), where more than 120,000 tons of ore containing about 1% $U_3O_8$ were shipped between 1955 and 1971 (Bundtzen and others, 1984, p. 43). These late magmatic or magmatic-hydrothermal deposits occur in and near a Jurassic peralkaline granite stock that cuts Ordovician or Silurian intrusive and metamorphic rocks. Other occurrences of uranium reported in southeastern Alaska consist of traces of radioactive minerals in rare-earth element-bearing fissure veins near Salmon Bay on northern Prince of Wales Island (Petersburg quadrangle, nos. 33-35); in Cenozoic intrusive rhyolite(?) near Skagway (Skagway quadrangle, no. 76); in accessory minerals in Miocene or Oligocene granite stocks on the mainland east of Wrangell (Bradfield Canal, no. 4) and east of Ketchikan (Ketchikan quadrangle, no. 105); and in non-marine clastic sedimentary rocks on Kuiu and Kupreanof Islands (Petersburg quadrangle, nos. 1, 64). The distribution and geologic settings of the Bokan Mountain deposit and of the other occurrences of radioactive minerals known in southeastern Alaska suggest that additional resources of uranium are mainly in tracts on plate 1 favorable or probably favorable for magmatic U-Th or REE deposits in peralkaline granite and related intrusions. There is also some potential for such resources in tracts favorable for REE-bearing fissure veins, and in tracts possibly favorable for magmatic U-Th or REE deposits in Cenozoic intrusions and for sandstone-hosted

uranium deposits.

Zinc (Zn). Zinc, mainly in the mineral sphalerite, is widespread in southeastern Alaska. It has been productively mined at a few deposits, and significant resources have been measured or reliably reported at several others. About 20,000 lbs of zinc were recovered in 1925-1951 from polymetallic fissure or replacement veins near Hyder (Bradfield Canal, no. 62), and concentrates containing about 75,000 pounds were shipped in 1947-48 from a stratiform Pb-Zn massive sulfide deposit on Revillagigedo Island near Ketchikan (Ketchikan qduadrangle, no. 76).

The largest measured resource of zinc in the Panhandle is in the Greens Creek stratiform polymetallic massive sulfide deposit on Admiralty Island, where extensive drilling and underground exploration have blocked out about 4 million tons of ore containing 8-10% zinc (Bundtzen and others, 1984, p. 18). Comparatively small zinc resources have been measured in stratiform Pb-Zn massive sulfide deposits on Revillagigedo Island (Ketchikan quadrangle, nos. 76, 83), and significant additional resources are reported in other stratiform deposits at Glacier Creek (Marmot), Sumdum, Tracy Arm, Cornwallis Peninsula, and Copper City (Bundtzen and others, 1984, p. 43). Zinc also is locally an important constituent in many of the other stratiform massive sulfide deposits known in the Panhandle.

The distribution of the deposits containing significant measured or reliably reported resources of zinc suggest that additional undiscovered resources are mainly in tracts on plate 1 favorable or probably favorable for stratiform massive sulfide deposits.

## MINERAL DEPOSITS

### Introduction

In this report, a mineral deposit is broadly defined as a natural concentration of valuable or potentially valuable minerals. No size, grade, tonnage, or commercial value is implied.

Where relative size or grade of a mineral deposit is implied, the term "deposit" herein generally refers to one that is relatively large, well explored, or once-productive, whereas the term "occurrence" generally refers to one that is relatively small, low grade, unexplored, or unconfirmed. Otherwise, the terms "deposit" or "occurrence" are used interchangably in this report. Anomalous amounts of metals reported only in geochemical analyses are not considered to be "occurrences".

### Classification of deposits

This report classifies the mineral deposits known in southeastern Alaska into genetic types by comparing relevant criteria for recognizing those types of deposits with the information that has been published, supplemented wherever possible by unpublished observations by USGS and other colleagues.

Recognition criteria currently widely used to classify mineral deposits (Erickson, 1982; Sinclair and others, 1981) may be relatively unambiguous, as in the case of epigenetic quartz veins; or they may be controversial, as for

Mississippi Valley-type Pb-Zn deposits (Pratt, 1984); or ambiguous, as for certain metamorphosed deposits (Sinclair, 1981, p. 24-25); or they may require levels of information not yet available for most of the deposits known in southeastern Alaska.

For purposes of this report, I have selected mainly geological recognition criteria that are (a) appropriate to the general level of geologic information about the mineral deposits; (b) generally applicable to similar deposits throughout the study area; and (c) wherever possible are recognizable at the deposit. The deposits are classified primarily on the basis of their geological characteristics and secondarily on the basis of their metal content because most deposits in southeastern Alaska lack systematic or reliable public data about tonnage and grade, or about relative or absolute abundance of their contained metals or other mineral commodities. Notable recent exceptions include the porphyry molybdenum deposit at Quartz Hill near Ketchikan (Hudson and others, 1977, 1979), and the massive sulfide deposit at Greens Creek on Admiralty Island (Western Miner, 1984).

The nine types of lode mineral deposits herein interpreted to occur in southeastern Alaska are:

1. Base- or precious-metal-bearing vein deposits.
2. Massive sulfide deposits.
3. Disseminated sulfide deposits.
4. Porphyry deposits.
5. Skarn deposits.
6. Magmatic uranium-thorium (U-Th) or rare-earth element (REE) deposits.
7. Magmatic oxide or sulfide deposits.
8. Rare-earth element (REE)-bearing vein deposits.
9. Sandstone-hosted uranium (U) deposits.

I have interpreted these nine specific types of deposits mainly because at least some of the deposits known in southeastern Alaska exhibit features that coincide with one or more of the geological or other criteria currently widely recognized as characteristic for those types of deposits. In addition to these nine types of deposits, certain rocks may host as-yet-undiscovered types of deposits associated elsewhere with those kinds of rocks. An exhaustive discussion of the potential for such geologically speculative types of deposits is beyond the scope of this report, but a few examples include:

1. Sedimentary redbed copper deposits (Sinclair and Kirkham, 1981, p. 23) associated with gypsum-bearing limestone in the Mississippian Iyoukeen Formation (Plate 1: map unit Mc) on northern Chichagof Island, or with subaerial or intertidal redbeds in the Devonian Karheen Formation (Dcg) on western Prince of Wales Island;

2. Volcanic redbed (sabhka) copper deposits (Kirkham and Sinclair, 1981, p. 23-24) associated with Triassic(?) Whitestripe Marble (Trc) and Nikolai Greenstone (Trb) on western Chichagof Island;

3. Carbonate- or sediment-hosted Pb-Zn deposits (Dawson, 1981, p. 27-29; Lyden, 1981, p. 15-17) in Paleozoic limestone, marble, and carbonate-turbidite (SOs, DOc, DSc, DSs) on Prince of Wales, Kuiu, and Chichagof Islands, and in the Glacier Bay area;

4. Epithermal precious-metal deposits (Erickson, 1982, p. 108-125) associated with subaerial Cenozoic felsic volcanic rocks (Tv) on Kuiu, Kupreanof, and Zarembo Islands, or as stratabound disseminated replacement deposits in bedded rocks adjacent to Cenozoic faults.

Epigenetic and syngenetic deposits. The age of a mineral deposit relative to the age of the enclosing hostrocks is fundamental to and implicit in its classification. In this report, epigenetic deposits are defined as having formed after consolidation of sedimentary rocks, and after crystallization and cooling of igneous rocks. Epigenetic deposits in southeastern Alaska consist mainly of crosscutting fissure or replacement veins, but also include disseminated or massive replacement deposits in rocks near veins or faults. As herein defined, epigenetic deposits include skarn deposits, but do not include stockwork veins or disseminations in porphyry deposits, veinlike or disseminated magmatic segregations, and stratabound veins or disseminations formed during cooling of volcanic rocks. Syngenetic deposits are defined as having formed before or during consolidation and diagenesis of sedimentary rocks, and before or during crystallization or cooling of igneous rocks. Syngenetic deposits in southeastern Alaska consist of stratiform or stratabound massive or disseminated deposits in sedimentary, volcanic, or volcanic-related strata, magmatic deposits in mafic, ultramafic, and peralkaline intrusive rocks, porphyry deposits, and sandstone-uranium deposits.

Base- or precious-metal-bearing veins. Deposits classified as veins in this report are epigenetic, relatively thin, irregular, tabular, or sheetlike bodies formed in faults, fault breccias, joints, and other fracture zones. Vein deposits may consist of a single vein or of a system composed of a number of subparallel or anastomosing veins or vein stockworks. Vein deposits may form by filling of open or potentially open spaces by ore and gangue minerals, or by at least partial replacement of the wall rocks.

Epigenetic veins occur in several types of deposits described separately in this report. Allowing for gradational relations of such veins among these different types of deposits, the veins described in this section of the report include "hydrothermal replacement" deposits in altered wallrocks in or near veins or faults, but exclude veins known or presumed to be associated with skarn, porphyry, or magmatic deposits. Epigenetic rare-earth element (REE)-bearing veins are described separately because of their unusual mineralogy.

Epigenetic vein deposits in southeastern Alaska have been worked sporadically for nearly a century for Ag, Au, Cu, Pb, Zn, and W. Most have yielded relatively small amounts of ore, but veins near Juneau and on Chichagof Island have been major producers of precious metals. Veins containing barite, Mo, Sb, and other ore minerals have been prospected throughout the Panhandle, but

have not been mined.

Massive sulfide deposits. Deposits classified as massive sulfide deposits in this report are syngenetic tabular or lenticular bodies consisting mainly of sulfide minerals and of subordinate silicate or oxide minerals that generally conform to the bedding or other compositional layering of stratified hostrocks. The deposits may themselves form well-defined strata (stratiform), or they may form irregular masses confined to specific strata (stratabound). Most massive sulfide deposits commonly include gradational zones of disseminated and vein sulfide minerals.

Lenses or layers of massive and locally disseminated sulfide minerals that mainly are parallel to the foliation or schistosity of metamorphosed stratified hostrocks herein are interpreted to be metamorphosed syngenetic massive sulfide deposits, and are included in this classification of deposits. Such deposits commonly include epigenetic veins formed by mobilization or reconcentration of the syngenetic deposits during metamorphism.

Massive sulfide deposits known in southeastern Alaska are hosted mainly by felsic volcanic or volcanic-related hostrocks, by pelitic or flyschlike hostrocks, by the metamorphosed equivalents of those rocks, or by metamorphic rocks of undetermined protoliths.

Massive sulfide deposits that occur in volcanic or volcanic-associated hostrocks are widely interpreted to have formed on the seafloor by the precipitation of sulfide minerals (or barite) around vents of submarine hot springs related to synvolcanic faults or fracture zones (Lydon, 1981, p. 13-15; Franklin and others, 1981). The massive stratiform part of such syngenetic deposits in many cases is stratigraphically underlain by a funnel- or pipe-shaped hydrothermally altered zone that contains epigenetic stringers, stockworks, or disseminations of sulfide minerals.

Massive sulfide deposits hosted by submarine pelitic or flyschlike sedimentary rocks are interpreted to have formed near synsedimentary (growth) faults at the margins of tectonically active basins (Lydon, 1981, p. 15-17; Gustafson and Williams, 1981; Large, 1983). Stratiform deposits of massive sulfides (or barite) appear to have occurred in a brine pool fed by thermal springs issuing from the base of a growth fault scarp. Such syngenetic deposits commonly are associated with an underlying or laterally gradational hydrothermally altered zone containing epigenetic sulfide veins or disseminations that mark the feeder channel.

Massive sulfide deposits known in southeastern Alaska mainly contain varying proportions of Ag, Au, Cu, and Zn, or of Ag, Au, Pb, and Zn. The only such deposits that have produced significant amounts of ore, nearly all before WW I, are Ag-, Au, Cu, and Zn-bearing volcanogenic deposits in pre-Ordovician felsic metavolcanic rocks at the Khayyam and Stumble-on mines on southern Prince of Wales Island (Craig quadrangle, nos. 103, 104).

The volcanogenic Ag-Au-Cu-Pb-Zn massive sulfide deposit currently (1984) being developed at Greens Creek on Admiralty Island (Juneau quadrangle, no. 145a) occurs in felsic volcanic rocks interpreted (Berg and Grybeck, 1980) as part of a belt of Upper Triassic volcanogenic massive sulfide deposits that

stretches discontinuously for the length of the Panhandle. Deposits in this belt have been prospected since the early 1900's for base and precious metals, and one near Petersburg (Petersburg quadrangle, no. 11) was mined until 1980 exclusively for barite. The Ag-Ba-Pb-Zn deposit at Glacier Creek (Skagway quadrangle, no. 39) which may be part of this belt, comprises stratiform barite and massive sulfides and a footwall sulfide stringer lode in a sequence of mafic pillow flows, subordinate clastic and carbonate rocks, and minor felsic(?) tuff.

Stratiform Ag-Pb-Zn massive sulfide deposits hosted by flyschlike metasedimentary rocks of Permian or Triassic depositional age (p. 13) have been mined in a small way on Revillagigedo Island near Ketchikan (Ketchikan quadrangle, no. 76); and massive sulfide deposits in metamorphosed strata of undetermined age and protolith have been prospected for Ag, Au, Cu, Pb, and Zn near Wrangell (Petersburg quadrangle, nos. 24, 27), Endicott Arm (Sundum quadrangle, nos. 8, 9, 13,14), and Ketchikan (Ketchikan quadrangle, no. 104).

Disseminated sulfide deposits. Mineral occurrences classified as disseminated deposits in this report consist of apparently stratabound disseminations of sulfide minerals confined to or characteristic of specific volcanic, volcaniclastic, or sedimentary rocks, or to their metamorphic equivalents; and of disseminated sulfide minerals of uncertain classification in contact metamorphosed strata and in plutonic rocks. A few deposits of this type have yielded small amounts of Au or Ag, but none has recorded significant production of any ore.

The apparently stratabound deposits may be syngenetic, epigenetic, or both; geologic evidence of origin commonly is absent or inconclusive at the deposits. Those of syngenetic origin may be entirely of disseminated ore minerals, or they could be gradational with as-yet-undiscovered massive sulfide deposits. Epigenetic deposits may be gradational or otherwise associated with fissure veins or fault zones. Apparently stratabound disseminated sulfide deposits occur, for example, at copper prospects in Upper Triassic(?) subaerial basalt flows near Baker Peak on western Chichagof Island (Sitka quadrangle, no. 30); at gold or base-metal prospects in Jurassic or Cretaceous submarine basalt and slate near Juneau (Juneau quadrangle, nos. 99, 129) and Ketchikan (Ketchikan quadrangle, no. 36); and at numerous base- or precious-metal prospects in metamorphosed sedimentary and volcanic rocks of uncertain depositional age on Admiralty Island (Sitka quadrangle, no. 122), and on the mainland east of Admiralty Island (Juneau quadrangle, no. 120; Sumdum quadrangle, no. 20).

Sulfide minerals disseminated in contact metamorphosed strata are classified as disseminated deposits if they lack evidence of calcsilicate gangue minerals or of features characteristic of other types of deposits. Some of these deposits are possibly gradational with as-yet-undiscovered skarn deposits; others with porphyry or massive sulfide deposits. Disseminated sulfides, for example, occur at a Au-Cu prospect in biotite hornfels derived from Mesozoic(?) strata west of Glacier Bay (Mount Fairweather quadrangle, no. 104), and at a Ag-basemental prospect in Devonian metacarbonate east of Glacier Bay (Mount Fairweather quadrangle, no. 131).

Sulfide minerals disseminated in intrusive rocks herein are classified as disseminated deposits if they lack other evidence favoring their

classification as porphyry or magmatic segregation deposits. Examples of this type of deposit include occurrences of disseminations and veinlets of chalcopyrite or galena in Silurian granitic rocks on Annette Island (Ketchikan quadrangle, nos. 137, 138, 144, 147), and a Cu-Pb-Zn prospect in Triassic granodiorite near Hyder (Bradfield Canal quadrangle, no. 59).

Porphyry deposits. Deposits classified as porphyry deposits in this report occur in hydrothermally altered felsic or intermediate intrusive rocks and consist of disseminations, veinlets, and joint facings of molybdenite and pyrite, or of chalcopyrite and pyrite accompanied by varying amounts of pyrrhotite, molybdenite, sphalerite, galena, sulfosalts, scheelite, and gold or silver.

One of the world's largest porphyry molybdenum deposits currently (1984) under development is in Oligocene granite porphyry at Quartz Hill near Ketchikan (Ketchikan quadrangle, no. 105). Other examples of porphyry deposits in southeastern Alaska include porphyry Mo deposits in Tertiary granodiorite near Skagway (Skagway quadrangle, no. 80), and in Tertiary(?) quartz diorite on Baker Island (Craig quadrangle, no. 13); porphyry Mo-Cu deposits in Cretaceous(?) quartz monzonite on Forrester Island (Craig quadrangle, nos. 1, 2), and in Cretaceous(?) granodiorite on Kosciusco Island (Petersburg quadrangle, nos. 42-46); and a precious-metal-bearing Cu-Mo porphyry deposit in Tertiary(?) quartz monzonite porphyry at Muir Inlet west of Juneau (Mt. Fairweather quadrangle, no. 133). Several of these deposits have been extensively prospected, but none has recorded significant production.

In this report, occurrences only of sparsely disseminated sulfide minerals in felsic or intermediate intrusive rocks are classified as equivocal or unverified porphyry deposits if the intrusive rocks are correlative with neighboring plutons containing porphyry deposits, or as disseminated deposits if they are not.

Skarn deposits. Deposits classified as skarns in this report occur mainly in carbonate or other calcareous strata in the contact aureoles of intrusive rocks. The deposits, which are characterized by one or more of the calcsilicate gangue minerals garnet, epidote, diopside, wollastonite, or vesuvianite, and by calcite and quartz, consist of masses, veins, and disseminations of sulfide or oxide ore minerals, locally accompanied by recoverable amounts of gold or silver. In the Appendix, some contact metamprphic deposits are described as "tactite" if they contain magnetite, and some as "hornfels" if they apparently lack calcsilicate minerals. Skarn deposits commonly are subdivided into several subtypes based on hostrocks, compositions and ratios of ore and gangue minerals, and physicochemical conditions of formation (Einaudi and others, 1975; Dawson, 1981). Information about skarn deposits known in southeastern Alaska generally is too scant to systematically subdivide them in this way, but the ore minerals and geologic settings at many of the deposits suggest that they fall broadly into 4 categories:

(A) Ag-Au-Cu-Fe skarns in Ordovician or Silurian marble or other calcareous metasedimentary rocks, intermediate or mafic metavolcanic rocks, and diorite or gabbro intrusive rocks (Craig quadrangle, nos. 59-74). The deposits occur mainly along the contacts of the marble and metavolcanic rocks. Skarn deposits of this type near Kasaan on eastern Prince of Wales Island were mined in the early 1900's. Most of the ore that was mined consisted of gold- and silver-bearing

massive magnetite, chalcopyrite, and pyrite that replaced marble and calcsilicate minerals (Meyers, 1984).

(B) Ag-Au-Cu skarns in pre-Ordovician metacarbonate intruded by Cretaceous quartz diorite or granodiorite (Craig quadrangle, nos. 111-112; 118), and in Paleozoic metacarbonate and other calcareous metasedimentary rocks intruded by Tertiary or Cretaceous felsic or intermediate intrusive rocks (Mt. Fairweather quadrangle, nos. 52, 88, 121, 133). The deposits are associated with calcsilicate minerals at the contacts of the intrusive and the bedded country rocks, and typically are veins, disseminations, and small masses of chalcopyrite, pyrite, pyrrhotite, or magnetite, locally accompanied by trace amounts of gold or silver, and by variable small amounts of lead, zinc, molybdenum, or tungsten minerals. Skarn deposits of this type near Hydaburg on western Prince of Wales Island were mined in the early 1900's.

(C) Ag-Au-Cu-Fe skarns in marble and paragneiss roof pendants or xenoliths of undetermined premetamorphic age in Tertiary quartz monzonite or granodiorite (Bradfield Canal quadrangle, nos. 16-18; Ketchikan quadrangle, no. 24). The deposits are at the contacts of the intrusive and metamorphic rocks and consist of veins, disseminations, and small masses of magnetite, pyrrhotite, or chalcopyrite accompanied by calcsilicate gangue minerals, and, locally, by traces of silver or gold.

(D) Ag-, Au-, and W-bearing polymetallic (Cu, Mo, Pb, Zn) skarns in Lower Mesozoic or older metapelitic or volcaniclastic(?) rocks near contacts with Triassic granodiorite or with Tertiary quartz monzonite or granodiorite (Bradfield Canal quadrangle, nos. 62, 63). These deposits, which have been described mainly as fissure or replacement veins, may actually be polygenetic, originating perhaps as Triassic massive sulfide, porphyry, skarn, or vein deposits that subsequently were redeposited as veins or skarns during intrusion of Tertiary plutons. Ore minerals, locally accompanied by barite and calcsilicate minerals, include scheelite, copper, molybdenum, lead, and zinc sulfides, and, locally, silver-bearing sulfosalts and electrum. Deposits of this type near Hyder have been mined sporadically since the early 1900's for silver or gold, or for silver, gold, tungsten, lead, and zinc.

Magmatic uranium-thorium or rare-earth-element deposits. This group of deposits consists of U-Th or REE deposits originating as magmatic segregations or as late-magmatic-hydrothermal minerals in felsic intrusive rocks before or during their crystallization or cooling (MacKevett, 1963; Staatz, 1978; Nash and others, 1981). The deposits typically consist of veins or disseminations of radioactive or of REE minerals, accompanied by quartz, feldspar, and subordinate amounts of numerous other gangue minerals (for example, Staatz, 1978, p. 516). The best known such deposit in southeastern Alaska is in the Jurassic Bokan Mountain peralkaline granite (Plate 1, map unit Jgr) on southern Prince of Wales Island (Dixon Entrance quadrangle, nos. 30-32), where fissure or replacement veins contain U, Th, and REE minerals, accompanied mainly by quartz and albite (MacKevett, 1963; Staatz, 1978). The deposit has been mined or prospected intermittently since the mid-1950's and

has produced about 94,000 tons of ore containing about 1% $U_3O_8$ (Staatz, 1978). Felsic dikes that presumably are apophyses of the Bokan Mountain Granite cut hydrothermally altered (albitized) intrusive and metamorphosed country rocks near the granite and locally contain veins and disseminations of radioactive or REE minerals (Dixon Entrance quadrangle, nos. 19-20, 37, 42).

Other deposits containing primary REE or radioactive minerals have been prospected on southern Prince of Wales Island (Craig quadrangle, no. 120a), where a nepheline syenite stock possibly of Pennsylvanian or Permian age (Plate 1, map unit PPsy) contains veinlets and disseminations of eudialyte, a REE-bearing silicate mineral; near Skagway (Skagway quadrangle, no. 76), where traces of unidentified radioactive minerals occur in altered rhyolitic(?) intrusive rocks of Tertiary age (Tg?); on Admiralty Island (Sitka quadrangle, no. 106a; Juneau quadrangle, nos. 147a,b), where crystals of niobian rutile and traces of rare-earth elements occur in pegmatite veins cutting Mesozoic or Paleozoic metamorphic rocks; and east of Wrangell (Bradfield Canal quadrangle, no. 4) and Ketchikan (Ketchikan quadrangle, no. 105), where accessory minerals in Miocene or Oligocene granite stocks contain traces of radioactive minerals.

Magmatic oxide or sulfide deposits. Deposits classified as magmatic oxide or sulfide deposits in this report are disseminations, masses, and veinlike primary segregations of oxide or sulfide minerals in mafic or ultramafic intrusive rocks. These syngenetic deposits, which formed before or during cooling of the intrusive hostrocks, may occur as stratiform accumulations or as disseminations in specific layers or zones in the intrusions, or they may be distributed in apparently random fashion throughout the hostrocks.

Mafic- or ultramafic-hosted magmatic deposits known in southeastern Alaska fall mainly into 2 subtypes: (1) Fe-Ti(-Cr-PGM) deposits in Upper Mesozoic zoned ("Alaska-type") ultramafic intrusive complexes (Taylor, 1967; Taylor and Noble, 1969); and (2) Cu-Ni(-Co-PGM) deposits in Cenozoic layered mafic-ultramafic intrusions (Naldrett, 1981).

The dozen or so zoned ultramafic intrusive complexes known in southeastern Alaska are distributed for the length of the Panhandle (Taylor, 1967). The complexes ideally are concentrically zoned from a core of dunite, through intermediate zones of peridotite and clinopyroxenite, to a bordering zone of hornblendite. The complex on Duke Island shows unusually well-developed rhythmic layering, grading, and other magmatic-sedimentary features (Irvine, 1974). Some of the complexes are at least partially enclosed in an envelope of gabbro. Several of the complexes are ideally zoned (Prince Rupert quadrangle, nos. 4-18; Craig quadrangle, nos. 166-168; Petersburg quadrangle, no. 49), but most of them lack either a concentric pattern or one or more of the zones (Ketchikan quadrangle, no. 149; Sumdum quadrangle, no. 2a; Port Alexander quadrangle, no. 24; Skagway quadrangle, no. 68). Mineral deposits in the zoned ultramafics typically occur mainly in the clinopyroxenite member of the complex, and consist of disseminations and small masses of titanium-rich magnetite, locally accompanied by chromite, and by traces of platinum-group metals (PGM). The deposits have been prospected intermittently since before WW II, but none has been mined.

Sulfide deposits in Cenozoic layered mafic and ultramafic intrusive rocks are known on Baranof (Port Alexander quadrangle, no. 25), Yakobi (Sitka quadrangle, nos. 2, 3), and western Chichagof (Sitka quadrangle, no. 26)

Islands, and west of Glacier Bay (Mount Fairweather quadrangle, nos. 29, 37-39, 59-60). The deposits typically consist of disseminations, masses, and veins of magnetite, pyrite, pyrrhotite, pentlandite, or chalcopyrite, locally accompanied by traces of Ag, Au, Co, or PGM, that occur in or near the base of layered gabbro-norite, or gabbro-pyroxenite-peridotite.

Two important segregation deposits of sulfide minerals in mafic-ultramafic intrusions apparently differ in type from either the zoned or layered complexes. The Salt Chuck deposit on Prince of Wales island (Craig quadrangle, no. 50) is in a stocklike body of Upper Mesozoic(?) gabbro and pyroxenite and consists of apparently randomly distributed veinlets and disseminations mainly of bornite and minor chalcopyrite; the presence of chalcocite, covellite, and native copper suggests that the deposit has undergone secondary enrichment. The "Mertie lode", near Funter Bay on Admiralty Island (Juneau quadrangle, no. 137), is an Upper Mesozoic(?) pipelike intrusion of gabbro-norite in which segregations of Cu-, Ni-, and Co-bearing sulfide minerals are concentrated at or near the keel of the pipe.

Several of the sulfide deposits have been extensively explored, but the only recorded production has been from the Salt Chuck deposit, where Cu, Au, Ag, Pd, and a little Pt were recovered from about 326,000 tons of ore mined in 1905-1941.

Rare-earth-element (REE)-bearing veins. This classification of deposits consists of epigenetic, locally radioactive, REE-bearing fissure veins or fault breccias, and one known occurrence of hydrothermal replacement in the interstices of a metasedimentary rock. The radioactive and rare-earth elements occur either in discrete minerals, such as thorite, bastnaesite, monazite, or allanite, or (presumably) microscopically in such gangue minerals as carbonate, fluorite, albite, hematite, quartz, and numerous other silicate, oxide, or sulfide gangue minerals. This classification also includes occurrences of fluorite-bearing veins or breccias that reportedly have been prospected for other minerals, but which are associated with anomalous geochemical values in radioactive or rare-earth elements.

REE-bearing veins in southeastern Alaska have been prospected since the early 1950's on northeastern Prince of Wales Island (Petersburg quadrangle, nos. 33-35), where they occur in fractures in Silurian bedded rocks (map unit DSs); and at two localities on southern Prince of Wales Island. At one locality (Dixon Entrance quadrangle, no. 54), quartz-hematite veins in altered andesite(?) contain radioactive minerals and monazite(?). At the other (Craig quadrangle, no. 42a), radioactive and rare-earth minerals replace interstitial material in albitized Ordovician or Silurian metasedimentary rocks that form a small roof pendant in albitized intrusive rocks (map unit SOg) near the contact of the Bokan Mountain Granite (Jgr). Fluorite-bearing veins are known on Zarembo Island (Petersburg quadrangle, no. 38), where they cut Cenozoic rhyolite dikes and domes, and east of Wrangell (Petersburg quadrangle, no. 24), where they cut paragneiss near a swarm of Cenozoic rhyolite dikes, and locally may have been prospected for silver or molybdenum (H. C. Berg and Grybeck, unpub. data, 1980).

On northeastern Prince of Wales Island, carbonate fissure veins or carbonate-cemented breccia zones up to 4 feet thick in hematite-altered graywacke contain small amounts of radioactive REE minerals, accompanied by diverse

silicate, oxide, and sulfide gangue minerals (Grybeck and others, 1984, p. 66-67). Reconnaissance in 1979 by the U.S. Geological Survey (H. C. Berg, unpub. data) indicates that felsic and mafic dikes near the deposits are similar in lithology and setting to Cenozoic dikes nearby on Zarembo Island (map unit Tv). The absence of postmineral deformation in the veins and their proximity to the dikes, which apparently do not cut the veins, suggest that the veins also are Cenozoic in age.

The quartz-hematite veins on southern Prince of Wales Island are undated, but their published description (MacKevett, 1963, p. 94) suggests that they are comparable in origin to those on northern Prince of Wales Island.

The disseminated replacement deposit on southern Prince of Wales Island (MacKevett, 1963, p. 80-82) consists of allanite, a radioactive REE-bearing silicate mineral, accompanied by hematite, albite, and other hydrothermal gangue minerals, in the interstices between detrital grains in quartzite, and of small amounts of allanite in quartz fissure veins. This deposit probably formed mainly at the time of emplacement of the Jurassic Bokan Mountain Granite.

The fluorite veins and breccias on Zarembo Island and near Wrangell cut Cenozoic volcanic or intrusive rocks (H. C. Berg, unpub. data, 1980).

Sandstone-hosted uranium deposits. Mineral occurrences classified in this report as sandstone-hosted uranium deposits consist of traces of radioactive minerals in Tertiary clastic sedimentary rocks.

In southeastern Alaska, uranium minerals in clastic sedimentary rocks are known only in the Keku Strait area of Kuiu and Kupreanof Islands (Port Alexander quadrangle, no. 1; Petersburg quadrangle, no. 64), where the deposits consist of traces of uranium in the Kootznahoo Formation, a nonmarine, lacustrine, or shallow marine formation of early or mid-Tertiary age (map unit Ts). Most of the radioactive occurrences known are in dolomitic sandstone containing carbonized plant fragments. The occurrences have been prospected since about 1976.

## MINERAL RESOURCE ASSESSMENTS

### Introduction

The mineral resource assessments in this report predict the relative favorability of geological tracts (Mineral Assessment Tracts on plate 1) in southeastern Alaska for the occurrence of specific types of metallic mineral deposits. The assessments are qualitative judgements of the potential for one or more undiscovered deposits of a type or types appropriate to its geological (metallogenic) environment. Such undiscovered deposits are assumed to have mineral, tonnage, and grade characteristics similar to those of deposits of that type already known in southeastern Alaska, but the assessments do not predict or imply whether the deposits are economically exploitable.

Methodology. The mineral assessments are based on the "deposit model" concept, which implies that a specific type of mineral deposit and its geological environment have specific physical, chemical, geological, or mineralogical characteristics (recognition criteria) that are generally similar wherever they occur (Sinclair and others, 1981, p. 39). Recognition criteria for the types of deposits herein

interpreted in southeastern Alaska are summarized in the section on Classification of Mineral Deposits (p. 24-33).

The resource assessment is graphically depicted on plate 1, which shows the relative potential of geological tracts in southeastern Alaska for the occurrence of specific types of metallic mineral deposits at 3 levels of favorability. Plate 1 is supplemented by the descriptions in the following section of this report of selected tracts according to type(s) of deposit(s), regional geologic (metallogenic) controls, and levels of relative favorability. Because there are no tract-by-tract descriptions, table 2 provides an index of the numbered mineral assessment tracts on plate 1 and the corresponding pages in the text that describe them.

Ranking of tracts. The potential of tracts for undiscovered deposits of one or more specific types is judged at 3 levels of relative favorability, based on whether the tracts contain known occurrences of deposits of that type, and whether they contain geological, geochemical, or geophysical features associated with that type of deposit. For example, on plate 1, tracts judged to be "favorable" contain known occurrences of the specified types of deposits, and geological, geochemical, or geophysical indications favoring those types of deposits; tracts judged to be "probably (moderately) favorable" contain occurrences of equivocal or of unverified types of deposits or of unclassified deposits, and favorable geological, geochemical, or geophysical indications; and tracts judged to be "possibly favorable" host no known mineral occurrences or occurrences only of scattered quartz veins, but are judged to contain favorable geological, geochemical, or geophysical indications. Areas on plate 1 not included in any such tracts may contain undiscovered mineral resources, but have insufficient public information to assess their mineral resource potential.

The boundaries and relative rankings of the tracts reflect information publicly available as of 1984, and could change with discovery of new deposits or with acquisition of additional geologic or economic data on the known deposits.

### Epigenetic base- or precious-metal-bearing veins

Uncounted numbers of epigenetic quartz or carbonate fissure or replacement veins occur in southeastern Alaska. Many have been prospected since before 1900 for base and precious metals. Some have produced small to major amounts of gold, silver, copper, lead, zinc, or tungsten; some have probably been worked for small, but unreported, amounts of gold or silver; and many have proved to be barren or too lean to mine.

Metallogenesis. The principal geological processes resulting in the formation of epigenetic veins are faulting, regional metamorphism, and emplacement of intrusive igneous rocks. At any deposit, one or more such processes must have combined uniquely to provide: a source of ore and gangue minerals; a (presumably) fluid medium for dissolving and transporting them; a "plumbing system" for circulation of mineralizing fluids; and a site where structural or other conditions favor their deposition. Most epigenetic veins known in southeastern Alaska are fissure fillings in faults, fault breccias, joints, and other fracture systems. At least some replacement of country rocks by quartz, carbonate, or ore minerals accompanies the formation of many of the fissure veins, but replacement as the dominant vein- and ore-forming process has been suggested at only a few deposits (for example, Bradfield Canal quadrangle, no. 62).

Recent isotopic studies of epigenetic gold- and silver-bearing quartz veins in Upper Mesozoic graywacke bordering the Gulf of Alaska (Mitchell and others, 1981) show that the veins formed by metamorphic heating of meteoric water that

Table 2. Index of numbered mineral assessment tracts on Plate 1 and corresponding pages in text describing the tracts.

| TRACT NO. | TYPE OF DEPOSIT [1] | REL. FAV. [2] | PAGE |
|---|---|---|---|
| 1 | V | F | 17,36 |
| 2 | V | F | 17,36 |
| 3 | V | F | 17,36 |
| 4 | V | F | 17,36 |
| 5 | V | F | 17,36 |
| 6 | V | F | 17,36 |
| 7 | V,DS | F | 14,17,36,43 |
| 8 | V,DS | F | 37,43 |
| 9 | V,DS | F | 14,17,37,43 |
| 10 | V,VM | F | 13,37,40 |
| 11 | V,VM | F | 13,37,40 |
| 12 | V,VM | F | 13,37,40 |
| 13 | V,VM | F | 13,37,40 |
| 14 | V,SM | F | 14,37,40 |
| 15 | V,SM | F | 14,17,37,40 |
| 16 | V | F | 37,41 |
| 17 | V,P,S | F | 14,17,37,41,45,48 |
| 18 | V,DS,P,S | PR | 15,37,45,48 |
| 19 | V,P | PR | 15,37,45,48 |
| 20 | V,DS,P,S | PR | 37,45,48 |
| 21 | V,S | PR | 37,48 |
| 22 | V,DS | PR | 37 |
| 23 | V,S | PR | 37,48 |
| 24 | V,MS,DS | PR | 13,37,41 |
| 25 | V,MS,P,S | PR | 13,37,41,48 |
| 26 | V,MS,S | PR | 13,37,41,48 |
| 27 | V,DS | PR | 14,37,44 |
| 28 | V,MS,S | PR | 14,37,41 |
| 29 | V,MS | PR | 37,41 |
| 30 | V,MS,S | PR | 15,37,41,48 |
| 31 | V,MS | PR | 37,41 |
| 32 | V,DS | PS | 37 |
| 33 | V,MS,DS | PS | 14,33,41 |
| 34 | V,DS | PR | 14,37,44 |
| 35 | V,MS,P,S | PS | 13,37,42,48 |
| 36 | V,MS,S | PS | 13,37,42,48 |
| 37 | V,DS | PS | 37 |
| 38 | V,DS | PS | 38 |
| 39 | V,DS | PS | 38 |
| 40 | V,MS,S | PS | 38,41 |
| 41 | V,DS,S | PS | 38 |
| 42 | V,DS,S | PS | 38 |
| 43 | V,MS,S | PS | 38,41 |
| 44 | V,MS,S | PS | 38,41 |
| 45 | V,MS | PS | 14,38 |
| 46 | V,DS,P,VR | PS | 16,38,55 |
| 47 | V,P,VR | PS | 16,38,55 |
| 48 | V,MS,DS,S | PR | 13,40 |
| 49 | V,MS | PR | 41 |
| 50 | VM | F | 13,41 |
| 51 | V,MS,P,S | PR | 14,41,42,48 |
| 52 | V,MS,S | PS | 14,41,48 |
| 53 | V,MS,S | PS | 41 |
| 54 | V,MS,S | PS | 41 |
| 55 | V,S | PR | 48 |
| 56 | V,MS,S | PS | 14,41,48 |
| 57 | V,DS,S | PS | 38 |
| 58 | V,DS,P,S | PS | 14,16,41,48 |
| 59 | V,MS | PS | 13,42 |
| 60 | DS | F | 13,43 |
| 61 | DS | F | 13,43 |
| 62 | DS | F | 14,43 |
| 63 | V,DS | PR | 14,44 |
| 64 | V,DS | PS | 14,44 |
| 65 | V,DS | PS | 14,44 |
| 66 | P | F | 15,45 |
| 67 | P | F | 15,45 |
| 68 | P | F | 16,45 |
| 69 | P | F | 16,45 |
| 70 | V,P,S | F | 45,48 |
| 71 | P | F | 45 |
| 72 | P | F | 45 |
| 73 | V,P,VR | PR | 16,45,54 |
| 74 | P | PR | 16,45,48 |
| 75 | P | PS | 46 |
| 76 | P | PS | 46 |
| 77 | V,DS,P | PS | 46 |
| 78 | P | PS | 16,46 |
| 79 | P,S | PS | 46 |
| 80 | P | PS | 16,46 |
| 81 | MS | F | 13,40 |
| 82 | VM | F | 13,40 |
| 83 | VM | F | 13,40 |
| 84 | VM | F | 13,40 |
| 85 | MS | F | 13,40 |
| 86 | V,VM | F | 13,17,40 |
| 87 | VM | F | 13,40 |
| 88 | VM | F | 40 |
| 89 | MS | F | 13,40 |
| 90 | VM | F | 13,40 |
| 91 | VM | F | 13,40 |
| 92 | VM | F | 13,40 |
| 93 | VM,SM | F | 13,40 |
| 94 | VM | F | 13,40 |
| 95 | VM | F | 13,40 |
| 96 | SM | F | 14,40 |
| 97 | MS | F | 14,40 |
| 98 | MS | F | 14,40 |
| 99 | MS | F | 14,40 |
| 100 | V,MS | F | 14,40 |
| 101 | S | F | 13,48 |
| 102 | S | F | 48 |
| 103 | S | F | 48 |
| 104 | S | F | 48 |
| 105 | S | F | 48 |
| 106 | V,S | F | 48 |
| 107 | S | F | 48 |
| 108 | S | F | 48 |
| 109 | S | F | 48 |
| 110 | S | F | 48 |
| 111 | S | F | 48 |
| 112 | V,S | F | 48 |
| 113 | S | F | 15,48 |
| 114 | V,DS,P,S | PR | 48 |
| 115 | S | PR | 48 |
| 116 | S | PR | 48 |
| 117 | S | PS | 48 |
| 118 | S | PS | 48 |
| 119 | S | PS | 48 |
| 120 | V,DS,P,S | PS | 15,48 |
| 121 | S | PS | 48 |
| 122 | S | PS | 15,48 |
| 123 | S | PS | 15,48 |
| 124 | S | PS | 15,48 |
| 125 | S | PS | 15,48 |
| 126 | S | PS | 15,48 |
| 127 | S | PS | 15,48 |
| 128 | S | PS | 15,48 |
| 129 | S | PS | 15,48 |
| 130 | MUR | F | 49 |
| 131 | MUR | F | 49 |
| 132 | MUR,MOS | PR | 50 |
| 133 | MUR | PR | 50 |
| 134 | MUR | PR | 50 |
| 135 | MUR | PS | 50 |
| 136 | MUR | PS | 50 |
| 137 | MUR | PS | 50 |
| 138 | MUR | PS | 50 |
| 139 | MOS | F | 15,52 |
| 140 | V,MOS | F | 16,17,52 |
| 141 | MOS | F | 15,52 |
| 142 | MOS | F | 15,52 |
| 143 | MOS | F | 15,52 |
| 144 | MOS | F | 15,52 |
| 145 | MOS | F | 15,52 |
| 146 | MOS | F | 15,52 |
| 147 | MOS | PR | 15,53 |
| 148 | MOS | PR | 15,53 |
| 149 | MOS | PR | 15,53 |
| 150 | MOS | PR | 15,53 |
| 151 | MOS | PR | 15,53 |
| 152 | MOS | PR | 15,53 |
| 153 | MOS | PR | 15,53 |
| 154 | MOS | PR | 15,53 |
| 155 | MOS | PR | 15,53 |
| 156 | MOS | PR | 53 |
| 157 | MOS | PS | 53 |
| 158 | MOS | PS | 53 |
| 159 | MOS | PS | 53 |
| 160 | MOS | PS | 53 |
| 161 | MOS | PS | 53 |
| 162 | MOS | PS | 53 |
| 163 | MOS | PS | 53 |
| 164 | MOS | PS | 53 |
| 165 | VR | F | 54 |
| 166 | VR | F | 54 |
| 167 | VR | PR | 54 |
| 168 | V,P,VR | PS | 55 |
| 169 | SU | PR | 16,55 |
| 170 | SU | PS | 16,56 |
| 171 | SU | PS | 16,56 |

[1] Type of deposit: V, epigenetic base- or precious metal-bearing vein; VM, volcanic-hosted massive sulfide deposit; SM, sediment-hosted massive sulfide deposit; MS, undivided massive sulfide deposit; DS, disseminated sulfide deposit; P, porphyry deposit; S, skarn deposit; MUR, magmatic uranium-thorium or rare-earth-element deposit; MOS, magmatic oxide or sulfide deposit; VR, rare-earth-element vein deposit; SU, sandstone-hosted uranium deposit

[2] Relative favorability: F, favorable; PR, probably (moderately) favorable; PS, possibly favorable

scavenged silica and ore metals from volcanic(?) clasts in the sedimentary rocks and deposited them in favorable structural sites (joints and faults) at shallower crustal levels. Contemporaneous emplacement of intermediate and felsic intrusive igneous rocks suggest their involvement in the ore-forming process, chiefly as additional sources of heat. Regional metamorphism, locally accompanied by large-scale faulting, also seems to have played an important role in the formation of epigenetic veins in metamorphic rocks along the western margin of the Coast Range batholith (Brew and Ford, 1984, p. 123).

Emplacement of intrusive igneous rocks, probably spatially related to faulting, probably has been an important process in forming some of the epigenetic veins. At some deposits, their role seems to have been mainly to provide heat and possible some volatiles for mobilization and circulation of vein- and ore-forming solutions (Mitchell and others, 1981); at others, the veins may have been deposited directly from late or residual magmatic fluids, but there are no published modern studies conclusively documenting this process for the origin of any of the productive fissure veins in southeastern Alaska. Many tracts containing vein deposits in southeastern Alaska, moreover lack either outcrops of intrusive rocks, or evidence that such rocks are genetically related to the veins (Twenhofel and Sainsbury, 1958, p. 1439).

With few exceptions, the productive gold- or silver-bearing fissure veins in southeastern Alaska occur in or near major high-angle faults or fault zones, or topographic lineaments presumed to be faults (Twenhofel and Sainsbury, 1954; plate 1 of this report). For example, the veins on Chichagof and Yakobi Islands (Sitka quadrangle, nos. 15, 42, 48) and in the Glacier Bay area (Mount Fairweather quadrangle, nos. 94-103) are localized in faults within or (presumably) subsidiary to the Fairweather fault zone; the Juneau gold belt (Juneau quadrangle, nos. 18, 24, 100-104; Sumdum quadrangle, nos. 27-30) adjoins the Chatham Strait fault and its branches along Stephens Passage; the Helm Bay (Ketchikan quadrangle, nos. 28-29), Ketchikan (Ketchikan quadrangle, nos. 69, 92), and southern Prince of Wales Island (Craig quadrangle, nos. 26, 40, 139, 139) gold lodes are in faults adjacent or subsidiary(?) to the Clarence Strait fault zone; and the veins near Hyder (Bradfield Canal quadrangle, nos. 53, 56, 62-63) occupy a complex system of faults that apparently are branches of faults along Portland Canal.

The age of formation of the productive fissure veins is established by the age of the faults, movement on many of which took place during Late Mesozoic and Cenozoic time (Twenhofel and Sainsbury, 1958, p. 1431). Their minimum age has not been determined, but such features as vugs and other indications of deposition in open spaces (Sumdum quadrangle, no. 1), and their persistence in a region of major Cenozoic uplift and of other deformation that still is underway (Hudson and others, 1982), suggests that at least some of the veins formed at shallow depth and are young enough to postdate most of the uplift.

The ore-forming process(es) and source(s) of the ore and gangue minerals in the fissure veins known in southeastern Alaska have not been systematically investigated. Available evidence, however, indicates that the veins hosted by Upper Mesozoic graywacke turbidite on western Chichagof Island (Sitka quadrangle, nos. 42, 48) probably are similar in origin to those in similar rocks bordering the Gulf of Alaska (Mitchell and others, 1981), where the ore and gangue minerals were extracted from the prism of sedimentary rocks by meteoric groundwater heated during Cenozoic regional metamorphism or igneous

intrusion. Epigenetic veins hosted by volcanic or sedimentary rocks containing disseminated or massive sulfides (for example, Juneau quadrangle, nos. 99, 129; Sumdum quadrangle, no. 17) probably were derived at least in part from those older deposits by an ore-forming process similar to the one that produced the graywacke-hosted veins.

Mineral assessments of selected tracts. The foregoing summary of metallogenesis suggests 5 main criteria for assessing the potential of geological tracts for epigenetic base- or precious metal-bearing veins:

1. Known occurrences of such veins

2. Faults or fracture systems

3. Regionally metamorphosed volcanic or sedimentary rocks, especially those containing disseminated or massive sulfides, along the western margin of the Coast Range batholith

4. Regionally metamorphosed Upper Mesozoic graywacke turbidite

5. Intrusive igneous rocks

The occurrence of placer gold deposits also is a favorable indication of auriferous quartz veins, although such deposits may also be derived from other types of lodes.

The following mineral resource assessments apply these criteria to selected tracts judged to be representative of the potential for epigenetic base- or precious metal-bearing veins at 3 levels of relative favorability.

(1) Favorable tracts. All tracts judged favorable for the occurrence of epigenetic base- or precious metal-bearing veins meet the first of the foregoing criteria, and most or all of the others. For example, the 4 tracts containing the Juneau gold belt (plate 1: tracts no. 1, 2, 3, 4), which extends discontinuously for more than 100 miles along the northeast side of Lynn Canal and Stephens Passage, occur in regionally metamorphosed, locally disseminated- or massive sulfide-bearing, sedimentary and igneous rocks that border the Coast Range batholith. The belt adjoins the major high-angle fault zone along Lynn Canal, and prominent topographic lineaments assumed to be faults along Stephens Passage, Endicott Arm, and other waterways; and it contains the largest and most productive gold-, silver-, and basemetal quartz lodes in southeastern Alaska, and numerous productive gold placers.

Favorable tracts on western Chichagof Island are straddled by the Fairweather and Peril Strait faults and contain the richly productive Chichagof district mines, hosted by regionally metamorphosed Upper Mesozoic graywacke (no. 5), and the Apex-El Nido gold-quartz veins, hosted by an amphibolite roof pendant in quartz diorite (no. 6).

The tracts near Ketchikan adjoin major faults or topographic lineaments along Clarence Strait, Revillagigedo Channel, and Behm Canal, and contain locally productive gold or basemetal lodes hosted by faulted and regionally metamorphosed Upper Mesozoic graywacke and andesite (nos. 7,

8, 9) that locally contain disseminated sulfide minerals; and by relatively unmetamorphosed but complexly fractured Paleozoic and Mesozoic sedimentary and igneous rocks (nos. 10, 11, 12, 13) that locally contain volcanogenic massive sulfide deposits. Other tracts near Ketchikan contain productive gold, silver, or lead-zinc veins hosted by regionally metamorphosed and complexly intruded pyritic or carbonaceous pelitic rocks (nos. 14, 15) that locally contain sediment-hosted massive Pb-Zn deposits.

Two tracts near Hyder (nos. 16, 17) contain veins that have produced gold, silver, lead, zinc, and tungsten. The veins are in complexly faulted and regionally metamorphosed Lower Mesozoic or older graywacke, andesite, and granodiorite that have been intruded by Cenozoic granodiorite and quartz monzonite.

(2) Probably (moderately) favorable tracts. Tracts judged probably (moderately) favorable for epigenetic base- or precious-metal-bearing veins meet the first criterion, but the veins that are known have produced small, or unrecorded or unverified amounts of ore. Nearly all tracts contain metamorphosed sedimentary or igneous rocks that locally carry disseminated or massive sulfide deposits, and all are disrupted by high-angle faults or are intruded by igneous rocks of widely diverse compositions. A few contain productive placer deposits, some of which were derived from auriferous quartz veins.

Representative examples of such tracts include the ones in the Glacier Bay area (tracts no. 18-22) and north of Glacier Bay (no. 23); on Admiralty (no. 24), Prince of Wales (nos. 25,26), Annette-Gravina (no. 27), and Revillagigedo (no. 28) Islands; and on the mainland northwest (no. 34) and east (nos. 29-31) of Ketchikan. These tracts contain quartz or sulfide veins that have produced relatively small amounts of ore containing gold, silver, copper, lead, or zinc, and are underlain by faulted, intruded, and regionally metamorphosed volcanic and sedimentary rocks that locally contain disseminated or massive sulfide deposits. The one north of Glacier Bay also contains major productive placer gold deposits derived from nearby unproductive auriferous quartz veins.

(3) Possibly favorable tracts. Tracts judged possibly favorable for epigenetic veins contain no or only widely scattered occurrences of such veins, but meet one or more of the other criteria. The tracts on western Chichagof and on Baranof Islands (tract no. 32), and east of Stephens Passage (no. 33), for example, are underlain by disseminated- sulfide-bearing regionally metamorphosed Upper Mesozoic graywacke and mafic volcanic rocks, adjoin the Fairweather, Chatham Strait, or Clarence Strait fault zones, and encompass tracts containing quartz fissure veins that have produced significant amounts of gold or silver.

Tracts on Prince of Wales (no. 35), Dall-Long-Sukkwan (no. 36), and northeastern Chichagof (no. 37) Islands contain scattered quartz veins and are underlain mainly by complexly faulted and intruded Paleozoic sedimentary and volcanic rocks locally containing disseminated or massive sulfide deposits, and constitute parts of large crustal blocks bounded by the Fairweather, Chatham Strait, Clarence Strait, and other Cenozoic regional high-angle faults.

Tracts on the mainland of southeastern Alaska from Juneau to Ketchikan (nos. 38-45, 57) contain a few auriferous quartz veins that have been worked for small amounts of ore, and are underlain by schist and paragneiss locally containing disseminated and massive sulfide deposits. The tracts are complexly faulted, are intruded by diverse plutons of the Coast Range batholith, and are largely bounded or crossed by the Coast Range megalineament (Brew and Ford, 1978), a prominent topographic depression that at least locally is a metamorphosed fault zone.

Tracts on Kuiu, Kupreanof, Zarembo, and Etolin Islands (nos. 46, 47) contain a few quartz or fluorite fissure veins and are underlain by Cenozoic volcanic, sedimentary, and intrusive igneous rocks, some of which may constitute part(s) of one or more calderas (Brew and others, 1984).

## Massive sulfide deposits

Before about 1965, massive sulfide deposits in southeastern Alaska commonly were interpreted as epigenetic massive "hydrothermal replacement" deposits localized by unspecified favorable physical or chemical conditions in certain sedimentary, volcanic, or metamorphic rocks, especially at or near the contacts of intrusive igneous rocks (for example, Buddington and Chapin, 1929, p. 316-320). The recognition, beginning in the late 1960's, that many of these deposits instead are syngenetic or diagenetic stratiform depsits localized by volcanic, sedimentary, and syndepositional tectonic processes in specific volcanic or sedimentary rocks, redefined their metallogenesis, and led to new guidelines for their exploration and for evaluating their mineral resource potential.

Several such deposits on Prince of Wales (Craig quadrangle, nos. 103, 104) and Kupreanof (Petersburg quadrangle, no. 11) Islands, and near Ketchikan (Ketchikan quadrangle, no. 76; Craig quadrangle, no. 155) have produced small to significant amounts of gold, silver, copper, lead-zinc, or barite ore; one deposit containing gold, silver, copper, lead, and zinc on Admiralty Island (Juneau quadrangle, no. 145a) currently is being developed; and others containing variable amounts of those metals are in various stages of exploration or development near Haines (Skagway quadrangle, no. 39), Endicott Arm (Sumdum quadrangle, nos. 8, 9, 13 14), Wrangell (Petersburg quadrangle, nos. 24, 27), and Ketchikan (Ketchikan quadrangle, no. 104).

Metallogenesis. The principal geological processes resulting in the formation of stratiform syngenetic massive sulfide deposits are submarine volcanism, and deposition of clastic sedimentary rocks in basins bordered by high-angle faults active at the time of sedimentation.

Massive sulfide deposits associated with submarine volcanism--widely termed volcanogenic deposits--generally are hosted by volcanic, volcaniclastic, or chertlike volcanic-related strata, or by sedimentary rocks interstratified or gradational with volcanic rocks. The massive stratiform part of the deposit commonly is underlain or adjoined by a pipelike hydrothermally altered sulfide-bearing stringer lode interpreted as representing the feeder channel for ore-forming solutions below submarine discharge vents. Subtypes of volcanogenic massive sulfide deposits have been established based on their

metal content and on the composition of the prevailing volcanic rocks (Lydon, 1981, p. 13-15). For example, deposits containing copper and zinc (chalcopyrite and sphalerite) as their chief metallic constituents are associated mainly with mafic volcanic sequences, whereas deposits distinguished by their lead, zinc, and copper (galena, sphalerite, chalcopyrite) contents commonly occur in sequences rich in felsic volcanic rocks. Many of the volcanogenic massive sulfide deposits known in southeastern Alaska, however, have not been systematically sampled for ore-metal ratios, and occur in strata containing undetermined or unreported amounts of both mafic and felsic volcanic rocks. For these reasons, massive sulfide deposits classified in this report as volcanogenic (volcanic-hosted) are not subdivided into volcanic-hostrock or metal-ratio subtypes.

Sediment-hosted massive sulfide deposits (Lydon, 1981, p. 15-17; Large, 1983) typically contain lead and zinc, accompanied by varyingly recoverable amounts of silver, copper, and barite, and are hosted by carbonaceous or siliceous fine-grained clastic rocks such as shale, graywacke turbidite, or calcareous siltstone. Tuffaceous strata may locally be present, but volumetrically important amounts of volcanic rocks do not occur in the deposits. All such deposits are interpreted to have accumulated in tectonically-controlled sedimentary basins, and to be spatially related to synsedimentary (growth) faults that were the feeder channels for the ore-forming solutions. The massive sulfide deposits hosted by sedimentary or metasedimentary rocks known in southeastern Alaska have not been studied in sufficient detail to determine whether they meet these metallogenic criteria. The only deposits classified as sediment-hosted massive sulfide deposits in this report are the stratiform massive lead-zinc-silver deposits on Revillagigedo Island (Ketchikan quadrangle, nos. 76, 83), where they are hosted by Mesozoic or Upper Paleozoic metamorphosed carbonaceous, pyritic, siliceous, and locally tuffaceous shale and siltstone. Relict growth faults have not been identified at or near the deposits, which herein are classified solely on the basis of their form, metal content, and hostrocks.

Because published descriptions of many massive sulfide deposits known in southeastern Alaska are incomplete or inconclusive, such deposits can be interpreted only as (undivided) massive sulfide deposits, and not classified according to their volcanic or sedimentary origin.

Mineral assessments of selected tracts. The foregoing summary of metallogenesis suggests 4 main criteria for assessing the potential of geological tracts in southeastern Alaska for syngenetic stratiform massive sulfide deposits:

1. Known occurrences of such deposits.

2. Significant amounts of mafic or felsic submarine volcanic, volcaniclastic, or chertlike volcanic-related rocks.

3. Carbonaceous or pyritic fine-grained clastic rocks locally accompanied by silica- or barite-rich chemical sediments.

4. Sulfide-bearing hydrothermally altered fault or breccia zones beneath or adjoining sulfide-bearing sedimentary or volcanic strata.

Elevated geochemical values of zinc or cadmium in samples of shale, and of manganese in samples of carbonate or calcareous sedimentary rocks (Large, 1983, p. 16-17; Boyle, 1974, p. 12-13) also is a favorable indication of sediment-hosted massive lead-zinc sulfide deposits.

(1) Favorable tracts. All tracts judged favorable for occurrence of stratiform massive sulfide deposits meet the first of the foregoing criteria and at least some of the others. The tracts west of Haines (plate 1: tract no. 81), and on Admiralty (nos. 82-85), Kupreanof (no. 86), Zarembo (no. 87), Gravina (nos. 10, 11), and Annette (nos. 12, 13) Islands, for example, contain base-, precious metal-, or barite-bearing stratiform deposits hosted by dated or inferred Upper Triassic felsic volcanic or volcaniclastic rocks or by interbedded carbonaceous or siliceous clastic rocks that also intertongue with carbonate, conglomerate, and basaltic pillow flows and aquagene tuff. The deposits have been interpreted (Berg and Grybeck, 1981) as a belt of metamorphosed Upper Triassic volcanogenic massive sulfide deposits that crops out discontinuously for the length of southeastern Alaska.

The favorable tract near Tarr Inlet (no. 88) contains a stratabound base- and precious metal-bearing deposit in metamorphosed Permian(?) andesitic flows and tuff. The tracts on southern Prince of Wales and nearby islands (nos. 89-95), on the other hand, contain stratiform volcanogenic massive sulfide deposits hosted by slightly metamorphosed Ordovician-Silurian, or by intensely metamorphosed pre-Ordovician silicic, intermediate, and locally mafic volcanic rocks and by minor interbedded quartz-rich graywacke (Gehrels and others, 1983; Barrie, 1984). Some of the tracts on Prince of Wales Island are underlain chiefly by rhyolitic metavolcanic rocks interpreted to represent eruptions proximal to submarine vents (G.E. Gehrels, pers. commun., 1983).

The tracts on Revillagigedo Island (nos. 14, 15, 96) contain stratiform Pb-Zn-Ag deposits hosted by metamorphosed Mesozoic or Upper Paleozoic carbonaceous fine-grained clastic and locally tuffaceous rocks. Sediment samples from streams draining these strata locally contain geochemically anomalous amounts of zinc (Koch, and others, 1978).

The tracts on the mainland south of Juneau (nos. 98,99), east of Wrangell (no. 100), and east of Ketchikan (no. 97) contain Cu-, Pb-, Zn-, and precious metal-bearing massive sulfide deposits hosted by schist and paragneiss of uncertain, but probably mainly sedimentary, protoliths, and undetermined premetamorphic age(s).

(2) Probably (moderately) favorable tracts. Tracts are judged probably (moderately) favorable for stratiform massive sulfide deposits if (a) they contain unverified or equivocal occurrences of such deposits; and (b) they are underlain by rocks lithologically similar to or continuous in outcrop with those underlying the favorable tracts. A tract north of Glacier Bay (tract no. 48), for example, contains a fissure(?) vein deposit interpreted as an epigenetic alteration pipe in metavolcanic rocks (Skagway quadrangle, no. 36); the pipe is further interpreted to represent the feeder system to an Upper Triassic(?) stratiform syngenetic barite-sulfide deposit (Skagway quadrangle, no. 39) in an included favorable tract.

The tract that includes nearly all of Admiralty Island (no. 24) contains an unverified massive sulfide deposit, and is underlain by stratigraphically and structurally complex metamorphic rocks, at least some of which herein are interpreted to correlate with those in the included tracts that contain massive sulfide deposits. Moderately favorable tracts on Kuiu (no. 49) and Zarembo (no. 50) islands are underlain by Upper Triassic metavolcanic and metasedimentary rocks correlative with those that elsewhere underlie favorable tracts; the one on Zarembo Island contains an unverified massive sulfide deposit. The tract on central Prince of Wales Island (no. 25) contains unverified massive sulfide deposits in Ordovician or Silurian andesitic volcanic rocks; the tract on southern Prince of Wales Island (no. 26) contains unverified such deposits and is underlain chiefly by Silurian or older volcanic, sedimentary, and metamorphic rocks continuous in outcrop with those in included tracts hosting massive sulfide deposits.

The tract on and near Revillagigedo Island (no. 28) is underlain by metamorphosed Mesozoic or Upper Paleozoic sedimentary and subordinate volcanic rocks continuous in outcrop with those underlying tracts containing massive sulfide deposits. The tract contains an unverified massive sulfide deposit and one known stratiform massive sulfide deposit for which only geochemical data are available (Ketchikan quadrangle, no. 83a). It also is drained by streams containing sediments locally anomalous in zinc (Koch and others, 1978).

Tracts on the mainland east of Ketchikan (nos. 29-31) contain unverified massive sulfide deposits hosted by schist and paragneiss of uncertain protolith(s) and premetamorphic age(s). The tract near Hyder (no. 51) is underlain by metamorphosed Lower Mesozoic or older graywacke and andesitic volcanic rocks that host unverified massive sulfide deposits in tracts 16 and 17.

(3) Possibly favorable tracts. Tracts are judged possibly favorable for stratiform massive sulfide deposits if they are underlain by rocks lithically similar to, or continuous in outcrop with, those underlying included or neighboring tracts favorable or probably favorable for such deposits. Possibly favorable tracts commonly contain scattered quartz veins, but few, if any, contain other types of known deposits.

The largest such tract in southeastern Alaska crops out continuously for almost 200 miles along the mainland coast from Juneau nearly to Revillagigedo Island (tract no. 33). The tract encloses several tracts favorable for stratiform massive sulfide deposits, and is underlain mainly by metamorphosed Mezozoic or Upper Paleozoic mafic and subordinate felsic or intermediate volcanic rocks, and by intertonguing clastic strata that locally are rich in silica ("chert" or "quartzite"), graphite, and pyrite.

Tracts on the mainland east of Ketchikan (nos. 43, 44) and northeast of Hyder (53, 54) are underlain by schist and paragneiss herein judged at least partly correlative with metamorphic strata in tracts probably favorable for stratiform massive sulfide deposits; and several tracts along the United States-Canada boundary (nos. 40, 52, 56, 58) are underlain by

metamorphosed Lower Mesozoic or older volcanic and sedimentary rocks herein presumed to be correlative with those underlying the probably favorable tract containing unverified massive sulfide deposits near Hyder (no. 51).

Tracts on Prince of Wales Island (nos. 35, 59) and on Dall-Long-Sukkwan Islands (no. 36) are underlain either by Silurian or Ordovician volcanic and sedimentary rocks, or by pre-Ordovician metamorphosed strata; both sequences correlate at least partly with rocks that underlie neighboring tracts favorable or probably favorable for stratiform massive sulfide deposits.

## Disseminated sulfide deposits

Disseminations and minute veinlets of pyrite, or, less commonly, of other sulfide minerals occur in virtually every rock unit in southeastern Alaska. Although a few such occurrences have yielded small amounts of gold and silver, they ordinarily are too low grade to mine. Under certain conditions, however, such deposits may themselves have intrinsic value, or they may constitute favorable indications of as-yet-undiscovered more specific types of deposits. For example, sulfide disseminations in volcanic rocks may grade into volcanogenic massive sulfide deposits and in sedimentary rocks into sediment-hosted massive sulfide deposits. In contact metamorphic aureoles they may grade into skarn deposits; in felsic or intermediate plutonic rocks into porphyry deposits; in mafic or ultramafic intrusive rocks into magmatic segregation deposits; and in rocks near fault zones or intrusive igneous rocks, into epigenetic vein or replacement deposits.

Metallogenesis. The principal geologic processes resulting in the formation of disseminated deposits are the same as those that produce the more specific types of undiscovered deposits with which the disseminated deposits may be gradational. Southeastern Alaska, however, also contains two types of disseminated deposits potentially valuable for their intrinsic metal content. One type occurs in Upper Triassic(?) mainly subaerial basalt flows on western Chichagof Island, and the other in Jurassic or Cretaceous submarine andesitic or basaltic volcanic rocks that crop out discontinuously along the archipelago and adjacent mainland for nearly the length of southeastern Alaska.

The deposits in the Upper Triassic(?) basalt flows consist of stratabound, presumably syngenetic, disseminated grains and veinlets of chalcopyrite and pyrite in amygdaloidal, but otherwise generally massive, basalt (Plate 1, map unit Trb). The basalt locally is faulted, hydrothermally altered, and intruded by aplite dikes, near some of which the sulfide minerals apparently have been reconcentrated into epigenetic veins that have been prospected for copper, lead, gold, and silver (Sitka quadrangle, no. 30). The best-known concentrations of copper in the basalt occur in a zone up to 400 feet long and 13 feet thick and average 2%-7% Cu.

Disseminations and veinlets of pyrite and subordinate magnetite, locally accompanied by other sulfide minerals, are nearly ubiquitous in the Jurassic or Cretaceous basaltic or andesitic tuff, agglomerate, and minor pillow flows (map unit KJv). Some of these volcanic rocks are aphanitic, but most are

distinguished by conspicuous relict augite or plagioclase phenocrysts. All have undergone complex folding, faulting, igneous intrusion, and up to greenschist facies regional metamorphism. In several places, epigenetic veins hosted by the volcanic rocks contain gold, silver, and base metals (Juneau quadrangle, no. 129; Ketchikan quadrangle, nos. 28, 29, 69); in a few places, disseminated sulfide deposits in the volcanic rocks have themselves been prospected or mined for precious metals (Ketchikan quadrangle, nos. 33, 69). Systematic investigations have not been made to determine the source(s) of the base or precious metals, but the apparently stratabound regional distribution of sulfide minerals, together with reconnaissance geochemical samples that show traces of gold and silver in some of the disseminated pyrite (Ketchikan quadrangle, no. 40a), suggest that at least some of the ore metals originated in the volcanic rocks.

Mineral assessments of selected tracts. The foregoing summary of metallogenesis implies two kinds of criteria for assessing the relative potential of geological tracts for metallic resources contained in disseminated deposits. One kind coincides with the criteria for each of the specific types of deposits with which the disseminated deposits might be gradational. For purposes of this report, assessments of tracts underlain by rocks containing disseminated sulfide minerals are implied in the assessments of the tracts for the specific types of deposits, and no assessments solely for disseminated deposits is made.

The other kind of criteria relate to the potential of tracts for disseminated deposits intrinsically valuable for metal resources. In southeastern Alaska, these criteria are:

1. Occurrence of disseminated deposits that have been prospected or mined for base or precious metals.

2. Occurrence of Upper Triassic(?) subaerial basalt flows.

3. Occurrence of Jurassic or Cretaceous submarine basaltic or andesitic volcanic rocks.

(1) Favorable tracts. Tracts judged favorable for occurrence of intrinsically valuable stratabound disseminated sulfide deposits meet the first of the foregoing criteria and one of the other two. The tracts on western Chichagof Island (plate 1: tract no. 60) and on Yakobi Island (no. 61) are underlain chiefly by the Upper Triassic(?) basalt, which on Chichagof Island contains disseminated sulfide deposits that have been prospected for copper and precious metals (Sitka quadrangle, nos. 30, 58, 60, 63).

The tracts near Juneau (no. 62) and Ketchikan (nos. 7, 8, 9) are underlain chiefly by andesitic or basaltic metatuff and agglomerate. In all but one of the tracts the metavolcanic rocks are cut by veins that have produced up to significant amounts of gold or silver, and at several places (Juneau quadrangle, no. 129; Ketchikan quadrangle, nos. 28, 29, 69) disseminated sulfide deposits in the metavolcanic rocks themselves have also been mined for precious metals. In tract no. 8 the metavolcanic rocks contain disseminated pyrite, samples of which locally are geochemically anomalous in gold and silver (Ketchikan quadrangle, no.

40a).

(2) Probably and possibly favorable tracts. Tracts judged probably favorable for intrinsically valuable stratabound disseminated sulfide deposits (tracts no. 27, 34, 63) are underlain mainly by disseminated-sulfide-bearing metavolcanic rocks correlative with, and continuous in outcrop with, those underlying the favorable tracts.

Tracts judged possibly favorable for such deposits (nos. 64, 65) are underlain by significant amounts of locally disseminated-sulfide-bearing metavolcanic rocks correlative with those underlying the favorable tracts.

## Porphyry deposits

Known or suspected porphyry deposits in southeastern Alaska range from occurrences of sulfide minerals sparsely disseminated in granitic rocks, to the world-class Quartz Hill porphyry molybdenum deposit northeast of Ketchikan (Ketchikan quadrangle, no. 105). Except for the extensive development currently underway at Quartz Hill, relatively few of the deposits have been prospected or developed enough to determine their size and grade, and except for small amounts of gold or silver that may have been recovered from some of the richer veins at a few of the deposits (Mt. Fairweather quadrangle, no. 133), no porphyry deposit has yet been mined in southeastern Alaska.

Metallogenesis. Porphyry (also called "stockwork") deposits (Sutherland Brown, 1976; Titley and Beane, 1981; Sinclair and Kirkham, 1981; Cox, 1982) occur in the upper parts of felsic or intermediate, commonly porphyritic, intrusive igneous rocks emplaced at relatively shallow crustal depth. The deposits include fissure fillings and replacement lodes and consist mainly of disseminations of sulfide minerals, stockworks of sulfide-bearing veins, veinlets, and joints, and sulfide-bearing fault or breccia zones. The deposits are also characterized by abundant pyrite and by concentric zones of hydrothermal alteration that grade outward from a silicic or potassic core to an argillic or propylitic perimeter. Individual deposits are irregular or roughly cylindroidal, ovoid, cupshaped, or cubic, and have horizontal and vertical dimensions ranging up to thousands of feet. The pyritic and hydrothermally altered zones may extend thousands of feet laterally and vertically beyond the limits of the base or precious metal deposits.

Porphyry deposits known in southeastern Alaska mainly fall into two categories: (1) porphyry molybdenum deposits in Miocene or Oligocene calcalkaline felsic intrusive rocks; and (2) porphyry copper-molybdenum deposits in Mesozoic or early Tertiary felsic or intermediate intrusions.

Except for the isotopically-dated Oligocene intrusion hosting the Quartz Hill molybdenum deposit, few of the other porphyry deposits in southeastern Alaska have been sampled or dated well enough to subdivide them by ore-metal or trace-element ratios, alteration features, or age. The following assesments thus are based on broadly defined geological characteristics of porphyry deposits, and not their various subtypes.

Mineral assessments of selected tracts. The foregoing summary of metallogenesis suggests three main criteria for assessing the potential of

geological tracts in southeastern Alaska for porphyry deposits:

1. Known occurrences of such depsits.
2. Occurrences of high-level, commonly porphyritic, felsic-intermediate intrusive rocks.
3. Geological evidence that the upper parts of the intrusions are preserved.

Elevated geochemical values in stream-sediment and rock samples (Boyle, 1974; Cox, 1982; Theodore, 1982; Ludington, 1982) of combinations of B, Be, Cs, Cu, F, La, Li, Mo, Nb, Rb, Ta, Sn, or W, accompanied by various other base and precious metals, also are favorable indications of porphyry deposits.

(1) Favorable Tracts. Tracts are judged favorable for occurrence of porphyry deposits if they contain at least one unequivocal such deposit. Two tracts in the Glacier Bay area (plate 1: tracts no. 66, 67), for example, contain gold- or silver-bearing Cu, Mo, or Cu-Mo porphyry deposits in stocks of Tertiary or Cretaceous porphyritic quartz monzonite (Skagway quadrangle, no. 2; Mt. Fairweather quadrangle, no. 133) or granodiorite (Mt. Fairweather quadrangle, no. 40); and one near Skagway (tract no. 68) contains a porphyry Mo deposit in Tertiary(?) granite (Skagway quadrangle, no. 80).

Favorable tracts in southern southeastern Alaska include one on the mainland east of Ketchikan (no. 69) containing the Quartz Hill porphyry Mo deposit in an Oligocene granite porphyry stock (Ketchikan quadrangle, no. 105); one near Hyder (no. 17) containing precious metal-bearing Cu or Mo porphyry deposits in Triassic granodiorite (Bradfield Canal quadrangle, no. 60; Ketchikan quadrangle, no. 6); one on northern Kosciusco Island (no. 70) containing Cu-Mo porphyry deposits in Cretaceous granodiorite; and ones on Forrester (no. 71) and Baker (no. 72) Islands that contain Mo-Cu porphyry deposits respectively in Cretaceous(?) quartz monzonite and quartz diorite.

(2) Probably (moderately) favorable tracts. Tracts judged probably (moderately) favorable for occurrence of porphyry deposits contain equivocal or unverified porphyry deposits in felsic or intermediate intrusive rocks. Examples of such tracts, which commonly also contain other types of deposits, include those in the Glacier Bay area (tracts no. 18, 19, 20) underlain in part by locally hydrothermally altered Cretaceous or Tertiary felsic or intermediate stocks containing disseminations and veinlets of pyrite, chalcopyrite, molybdenite, other basemetals, and traces of gold or silver. The mineral occurrences herein are tentatively classified as porphyry deposits because their hostrocks correlate with intrusive rocks containing porphyry deposits in included or neighboring tracts.

The tracts east of Wrangell (no. 73) and opposite the north end of Revillagigedo Island (no. 74) locally contain swarms of Miocene or Oligocene molybdenite-bearing felsic porphyry dikes (Petersburg quadrangle, no. 24; Ketchikan quadrangle, no. 26) that may be apophyses of buried molybdenum-porphyry stocks similar to the one at Quartz Hill.

(3) Possibly favorable tracts. Tracts judged possibly favorable for porphyry deposits are (a) underlain at least partly by felsic or intermediate plutons locally containing sparsely disseminated sulfide minerals mainly classified in this report as disseminated deposits; or (b) drained by streams containing sediments locally anomalous in metals elsewhere associated with porphyry deposits, and which may represent dispersion halos from buried porphyry plutons.

Examples of tracts underlain by intrusive rocks containing otherwise unclassified occurrences of disseminated sulfide minerals include two in Cretaceous granodiorite on Admiralty Island (tracts no. 75, 76) and one in Silurian trondhjemite on Annette Island (no. 77).

Examples of tracts distinguished only by stream-sediment or other geochemical data include one on southern Kupreanof Island (no. 78), where streams draining mainly Tertiary rhyolite and basalt flows contain sediments locally anomalous in Ag, Au, Be, La, Mo, Nb, Sn, Y, and Zr (Cathrall and others, 1983a-h); one on northeastern Prince of Wales Island (no. 79), where streams draining Devonian, Silurian, and Ordovician carbonate and clastic sedimentary rocks contain sediments locally anomalous in Ag, B, Mo, and W (Cathrall and others, 1983a, e-h); and one on the mainland east of Ketchikan (no. 80), where streams draining a large area of metamorphic rocks intruded by a swarm of quartz porphyry dikes southwest of the Quartz Hill deposit contain sediments locally anomalous in Be, Mo, and Nb (Berg and others, 1978, p. 12).

## Skarn deposits

Southeastern Alaska's long stratigraphic record of deposition of carbonate or other calcareous sedimentary rocks, and of repeated episodes of igneous intrusion give it significant potential for metallic mineral resources contained in skarn deposits. Such deposits on Prince of Wales Island (Craig quadrangle, nos. 73, 784, 111, 112), for example, yielded significant amounts of base-and precious-metal ore from about 1900 to 1920, and were among the first lode deposits to be mined in southeastern Alaska.

Metallogenesis. Skarn deposits form by epigenetic replacement mainly of carbonate or other calcareous bedded rocks by calsilicate and ore minerals at or near contacts of intrusive igneous rocks. Less commonly, skarn deposits also occur in contact metamorphosed pelitic rocks or in metacarbonate or calcareous metasedimentary rocks in regional metamorphic terranes. Essentially stratiform skarn deposits form by replacement concordant to bedding or other compositional layering, commonly at distances of tens of hundred of feet from the intrusive contact; discordant deposits mostly occur immediately adjacent to the contact; and some deposits occur in xenoliths or roof pendants enclosed by the intrusive rocks.

Skarn deposits characteristically contain quartz, calcite, and one or more calcsilicate gangue minerals such as diopside, garnet, tremolite, wollastonite, epidote-clinozoisite, and vesuvianite. In southeastern Alaska, mineral occurrences in intrusive aureoles apparently lacking calcsilicate minerals commonly are broadly termed "contact metamorphic" deposits; such deposits typically are sulfide minerals disseminated in hornfels derived from bedded rocks such as graywacke or shale.

In well-studied deposits or districts (Einaudi and others, 1981), skarn deposits commonly are classified genetically by tectonic setting, such as arc- or ocean-ridge-related deposits; by environment of deposition, such as porphyry-copper-related deposits; by hostrock composition, such as dolomite- or limestone-related deposits; by physicochemical conditions of formation; or by ore or gangue mineralogy. In southeastern Alaska, however, few deposits have been studied extensively enough to conclusively classify according to those parameters. The mineral assessments in this report therefore are based mainly on reported ore and gangue mineralogy and hostrocks, which appear to define four broad metallogenic categories.

(A) Ag-Au-Cu-Fe skarn deposits in Ordovician or Silurian marble or other calcareous metasedimentary rocks interbedded with intermediate or mafic metavolcanic rocks, and intruded by Ordovician or Silurian diorite or gabbro.

(B) Ag-Au-Cu skarn deposits in pre-Ordovician metacarbonate intruded by Cretaceous quartz diorite or granodiorite, and in Paleozoic metacarbonate or other calcareous metasedimentary rocks intruded by Tertiary or Cretaceous felsic or intermediate plutons.

(C) Ag-Au-Cu-Fe skarn deposits in marble and paragneiss roof pendants or xenoliths of undetermined premetamorphic age in Tertiary quartz monzonite or granodiorite.

(D) Ag-, Au-, and W-bearing polymetallic (Cu, Mo, Pb, Zn) skarn deposits in Lower Mesozoic or older pelitic metasedimentary or volcaniclastic(?) rocks intruded by Triassic granodiorite and again by Tertiary quartz monzonite or granodiorite.

Mineral assessments of selected tracts. The foregoing summary of the broadly defined metallogenic characteristics of skarn deposits in southeastern Alaska suggest the following general guidelines for assessing the potential of geological tracts for skarn deposits.

(1) Known occurrences of such deposits.

(2) Carbonate or calcareous sedimentary rocks, or, less commonly, pelitic sedimentary or volcaniclastic(?) rocks, near contacts of intrusive igneous rocks.

In addition to those general criteria, certain structural features that also are favorable indicators for skarn deposits (Dawson, 1981, p. 21) include:

(1) Shallow-dipping intrusive-carbonate contacts.

(2) Structural and stratigraphic traps in pelite or carbonate hostocks.

(3) Irregularities in the intrusive-carbonate contacts, especially reentrants or troughs.

(4) Stockwork fracturing along intrusive-carbonate contacts.

(1) Favorable tracts. Tracts judged favorable for occurrence of skarn deposits contain known occurrences of such deposits and are underlain at least partly by carbonate, calcareous, and in one tract, pelitic, bedded rocks intruded by igneous rocks. Examples of favorable tracts include: (metallogenic category A) one on eastern Prince of Wales Island (plate 1: tract no. 101) underlain by Ordovician or Silurian carbonate, mafic volcanic, and mafic intrusive rocks; (metallogenic category B) one on south-central Prince of Wales Island (no. 102) underlain by pre-Ordovician metacarbonate intruded by Cretaceous quartz diorite, and several on the islands north and west of Prince of Wales Island (nos. 70, 103, 104) and in the Glacier Bay area (nos. 105-112) underlain by Paleozoic metacarbonate intruded by Tertiary or Cretaceous felsic-intermediate plutons; (metallogenic category C) one on the mainland east of Wrangell (no. 113) underlain by a marble and paragneiss roof pendant in Tertiary granodiorite; and (metallogenic category D) one near Hyder (no. 17) underlain by Lower Mesozoic or older graywacke, argillite, and andesitic tuff intruded both by Triassic granodiorite and by Tertiary granodiorite.

(2) Probably favorable tracts. Tracts judged probably favorable for occurrence of skarn deposits are at least partly underlain by carbonate, calcareous, or certain pelitic bedded rocks intruded by igneous rocks, and either (a) contain equivocal or unverified skarn deposits; or (b) include tracts favorable for skarn deposits. Examples of such probably favorable tracts in each of the metallogenic categories include: (category A) tract no. 25 on central Prince of Wales Island; (category B) no. 26 on southern Prince of Wales Island, no. 114 on the islands west of Prince of Wales Island, and nos. 18-21, 23, and 115 in and north of the Glacier Bay area; (category A or B) possibly no. 116 on north-central Kupreanof Island; (category C) no. 30 on the mainland northeast of Ketchikan, and no. 55 northwest of Hyder; and (category D) no. 51 north and northwest of Hyder.

(3) Possibly favorable tracts. Tracts judged possibly favorable for skarn deposits are at least partly underlain by carbonate, other calcareous, and certain pelitic rocks intruded by igneous rocks. Some of these tracts neighbor tracts judged favorable or probably favorable for skarn deposits, but none is publicly known to contain any such deposits.

Examples of possibly favorable tracts in each of the metallogenic categories include: (category A) nos. 35 and 74 on northern Prince of Wales Island; (category B) no. 36 on Dall-Long-Sukkwan Islands, no. 117 on Coronation Island, and nos. 118-121 in the Glacier Bay region; (category C) nos. 122-129 on the mainland from east of Juneau to northeast of Wrangell; and (category D) nos. 52 and 56 north and northwest of Hyder, and no. 58 east of Juneau.

### Magmatic uranium-thorium or rare-earth-element deposits

Felsic intrusions crop out throughout southeastern Alaska. Isotopic and other dating studies show that they have been emplaced in geologically complex and varied country rocks at frequent intervals beginning at least as long ago as Ordovician time, through Miocene time. Several of the intrusions are known to contain traces of radioactive or REE elements, and one on southern Prince of

Wales Island hosts the only uranium deposit that has been mined in Alaska.

Metallogenesis. Magmatic U-Th or REE deposits mostly occur in high-level intrusions of alkaline or peralkaline magmas and originate by differentiation of U-, Th-, or REE-rich phases during late stages of emplacement and crystallization of the magma (Mathews, 1978; Bell, 1981, p. 29). Such soda- and silica-rich magma may form by *in situ* partial melting of previously enriched uraniferous or REE-bearing sedimentary or volcanic rocks, or by other crustal processes of magmatic fractionation or differentiation. Under favorable climatic and physiographic conditions, primary U-Th deposits may be upgraded by supergene (secondary) enrichment.

The most significant magmatic U-Th or REE deposits discovered to date in southeastern Alaska occur in or near faulted and hydrothermally altered, but otherwise essentially undeformed Late Paleozoic or Mesozoic alkaline or peralkaline granite or pegmatite that intrudes complex and heterogeneous assemblages of regionally deformed and metamorphosed rocks as old as Ordovician or possibly Precambrian age. The productive Bokan Mountain U-Th deposit on southern Prince of Wales Island (Dixon Entrance quadrangle, nos. 30-32), for example, consists of veins and disseminations of uranoan thorianite in and near a stock of Jurassic peralkaline granite that intrudes metamorphosed Ordovician or Silurian intrusive and bedded rocks. Other occurrences that have been prospected or otherwise reported include traces of radioactive minerals or of radioactive or REE-bearing accessory minerals in Cretaceous or Tertiary granite pegmatite veins (Sitka quadrangle, no 106a); in Tertiary intrusive rhyolite(?) (Skagway quadrangle, no. 76) and Miocene or Oligocene calcalkaline granite (Bradfield Canal quadrangle, no. 4) and granite porphyry (Ketchikan quadrangle, no. 105).

Mineral assessments of selected tracts. The foregoing summary of metallogenesis suggest 4 main criteria for assessing the potential of geological tracts in southeastern Alaska for magmatic U-Th or REE deposits.

1. Known occurrences of such deposits.

2. Stocklike intrusions and related apophyses of alkaline or peralkaline granite emplaced at relatively shallow crustal depth.

3. Veins or dikes of granite (quartz-orthoclase-albite) pegmatite or aplite, especially, but not exclusively, those containing sodic amphiboles or pyroxenes.

4. Intrusions of calcalkaline granite, quartz monzonite, or granodiorite emplaced at relatively shallow crustal depth.

(1) Favorable tracts. Tracts judged favorable for magmatic U-Th or REE deposits contain known occurrences of such deposits and are underlain by hypabyssal stocks and related apophyses of alkaline or peralkaline granite. The two favorable tracts are both on southern Prince of Wales Island. One (plate 1: tract no. 130) is underlain by metamorphosed Ordovician or Silurian intrusive and bedded rocks and contains the Jurassic Bokan Mountain peralkaline granite and its apophyses, which host the productive Bokan Mountain U-Th deposits. The other (no. 131) is

underlain by metamorphosed pre-Ordovician volcanic and bedded strata and intruded by stock of Pennsylvanian or Permian syenite locally containing up to several percent of eudialyte, a rare-earth-bearing silicate mineral.

(2) Probably (moderately) favorable tracts. Tracts judged moderately favorable for magmatic U-Th or REE deposits (a) contain known occurrences of such deposits and are underlain at least partly by hypabyssal calcalkaline granite pegmatite, granite, quartz monzonite, or granodiorite; or (b) enclose tracts favorable for such deposits.

The probably favorable tracts are : one on southern Prince of Wales Island (tract no. 132) underlain by metamorphosed Ordovician or Silurian rocks that includes the tract containing the Bokan Mountain U-Th deposits; one on central Admiralty Island (no. 133) underlain by metamorphosed Triassic or older strata locally intruded by pegmatite veins containing ehuedral crystals of niobian rutile up to 5 inches long; and one northwest of Juneau (no. 134) underlain by Devonian(?) strata hosting a small Tertiary intrusive body containing veinlets carrying thorianite and euxenite, a U- and REE-bearing oxide mineral.

(3) Possibly favorable tracts. Tracts judged possibly favorable for magmatic U-Th or REE deposits are underlain at least partly by hypabyssal calcalkaline intrusions of granite or other felsic igneous rocks containing veinlets or accessory minerals carrying traces of radioactive or rare-earth elements.

Virtually all felsic or intermediate intrusive rocks contain radioactive- or rare-earth-bearing accessory minerals. In this report, tracts judged possibly favorable for magmatic U-Th or REE deposits are limited to those containing occurrences that have been prospected or explored by private interests and at least briefly visited by USGS investigators. The possibly favorable tracts comprise: one near Skagway (no. 135) partly underlain by hydrothermally altered Tertiary intrusive rhyolite(?) containing traces of unspecified radioactive minerals in fractures; one on northern Admiralty Island (no. 136) underlain by metamorphosed Triassic or older rocks intruded by Cretaceous(?) granite pegmatite veins containing rare-earth-bearing heavy minerals; one east of Wrangell (no. 137) underlain by Miocene or Oligocene granite containing unspecified radioactive minerals; and one east of Ketchikan (no. 138) underlain by the Oligocene granite porphyry that hosts the Quartz Hill porphyry molybdenum deposit and which also contains traces of uranium in its accessory minerals.

### Magmatic oxide or sulfide deposits

Virtually all mafic-ultramafic rocks known in southeastern Alaska contain oxide or sulfide ore minerals, commonly accompanied by traces of platinum-group metals, or, locally, of gold or silver. The largest and richest deposits discovered to date are in intrusive complexes, where the ore minerals occur mainly as stratabound veinlets or disseminations hosted by specific mafic or ultramafic rock types; as stratiform bodies of massive oxide or sulfide minerals; or as discordant veins and disseminations at or near the basal or outer contacts of the complexes. The discordant deposits may occur

both in the intrusive rocks and in the adjoining country rocks.

In addition to the deposits in the intrusive complexes, sulfide or oxide ore minerals also occur in mafic or ultramafic bodies bounded by faults (Loney and others, 1975), or in ultramafic xenoliths or roof pendants in the Coast Range batholith (Buddington and Chapin, 1929, p. 192-197).

Several of the deposits in the intrusive complexes have been drilled or explored by surface or underground workings (Craig quadrangle, no. 167; Prince Rupert quadrangle, nos. 4-18; Skagway quadrangle, nos. 67, 68; Sumdum quadrangle, no. 24; Mount Fairweather quadrangle, no 39; Sitka quadrangle, nos. 2, 3, 26; and Juneau quadrangle no. 137), and one (Craig quadrangle, no. 50) has recorded production of ore containing gold, silver, copper, and palladium.

Metallogenesis. Oxide- or sulfide-bearing mafic-ultramafic complexes known in southeastern Alaska fall mainly into 3 petrogenetic categories: (a) igneous intrusions; (b) fault-bounded bodies; and (c) xenoliths or roof pendants in the Coast Range batholith. The mafic-ultramafic intrusive complexes in turn can be divided into the following subtypes:

1. Upper Mesozoic zoned complexes hosting magmatic segregation deposits of Ti-rich magnetite, accompanied by subordinate chromite and by traces of platinum-group metals. These so-called "Alaska-type" ultramafic intrusions (Taylor and Noble, 1960) ideally grade outward from a dunite core through concentric zones of peridotite, pyroxenite, hornblendite, and gabbro. They crop out discontinuously for the length of southeastern Alaska, and lie within or near a belt of Upper Mesozoic volcanic and sedimentary rocks to which the intrusions are genetically related (Berg and others, 1972, p. D17).

2. Lower Tertiary layered intrusions mainly hosting segregations of Co-, Cu-, and Ni-bearing sulfide minerals, locally accompanied by chromite, magnetite, and traces of gold, silver, and platinum-group metals. These layered complexes (Reed and Dorr, 1942; Pecora, 1942; Kennedy and Walton, 1946; Rossman, 1963) ideally grade stratigraphically upward in composition from ultramafic through mafic to relatively silicic rock types, and intrude disrupted terranes of Upper Paleozoic or Mesozoic volcanic, sedimentary, and intrusive rocks in the northwestern part of southeastern Alaska.

3. Intrusive bodies probably of Upper Mesozoic or Tertiary age having characteristics that do not clearly fit the two foregoing subtypes. These bodies occur throughout the Panhandle as plugs, pipes, dikes, and sills of pyroxenite, hornblendite, and gabbro. They include the one that hosts the Salt Chuck deposit on eastern Prince of Wales Island, which has produced significant amounts of ore containing gold, silver, copper, and palladium; and other bodies containing chromite, magnetite, or Co-Cu-Ni-bearing sulfide minerals.

Fault-bounded mafic-ultramafic bodies, mainly of serpentized dunite or

peridotite, contain disseminations and veinlets of magnetite or chromite, and occur in tectonically disrupted terranes on Baranof, Admiralty, and Revillagigedo Islands, and elsewhere in southeastern Alaska. The bodies are undated, but presumably were tectonically emplaced into their present sites in Late Mesozoic or Cenozoic time.

Locally, gneissic ultramafic bodies that form xenoliths or roof pendants in Cenozoic granodiorite or quartz diorite of the Coast Range batholith have been mapped along the mainland east of Stephens Passage (Buddington and Chapin, 1929; Brew and others, 1977, p. 49-51). The bodies are mainly pods and irregular masses ranging from a few tens of feet to several miles in maximum dimension of partly serpentinized dunite, peridotite, hornblendite, and gabbro that locally contain disseminations and veinlets of chromite, magnetite, and sulfide minerals.

Mineral assessments of selected tracts. The foregoing summary of metallogenesis suggests 4 main criteria for assessing the potential of geologic tracts in southeastern Alaska for magmatic oxide or sulfide deposits.

1. Known occurrences of such deposits.

2. Occurrences of mafic-ultramafic intrusive compleses.

3. Occurrences of fault-bounded ultramafic bodies.

4. Xenoliths or roof pendants of ultramafic rocks in the Coast Range batholith.

In addition, strongly positive magnetic or gravity anomalies having roughly circular or equant outlines are favorable indications of mafic-ultramafic complexes, as are elevated geochemical values of Cr, Co, Cu, and Ni in stream sediment, pan-concentrate, soil, or biological samples.

(1) Favorable tracts. Tracts judged favorable for occurrence of magmatic oxide or sulfide deposits contain known occurrences of such deposits in mafic-ultramafic intrusive complexes that have been drilled, or explored relative extensively by surface or underground workings.

Favorable tracts containing deposits in zoned or pipelike ultramafic intrusive complexes are near Klukwan (plate 1: tract no. 139), on Admiralty (no. 140) and Duke (no. 141) Islands, and on the mainland east of Stephens Passage (no. 142) and near the mouth of Ernest Sound (no. 143); those containing deposits in the layered intrusive complexes are west of Glacier Bay (no. 144), and on Yakobi and western Chichagof (no. 145) Islands; and the one containing the Salt Chuck deposit in an ultramafic intrusion of uncertain petrotectonic origin is on east-central Prince of Wales Island (no. 146).

(2) Probably (moderately) favorable tracts. Tracts judged moderately favorable for magmatic oxide or sulfide deposits contain known occurrences of oxide or sulfide minerals in mafic or ultramafic intrusive complexes other than those in the favorable tracts.

Examples of moderately favorable tracts containing zoned ultramafic

complexes are near Haines (tract no. 147), Petersburg (no. 148), and Ketchikan (nos. 149, 150); those containing layered complexes are west of Glacier Bay (nos. 151, 152, 153); and those containing unspecified ultramafic intrusions are on Baranof (nos. 154, 155) and on southern Prince of Wales (no. 156) Islands.

(3) Possibly favorable tracts. Tracts judged possibly favorable for magmatic oxide or sulfide deposits contain bodies of ultramafic rocks that either are bounded by faults, or occur as xenoliths or roof pendants in the Coast Range batholith. This category would also include tracts identified solely by anomalous geophysical or geochemical data, but no tracts meeting only these criteria are shown on plate 1.

The tracts containing the fault-bounded ultramafic bodies are on Baranof (tracts no. 157, 158), Admiralty (no. 159) and Revillagigedo (no. 160) Islands, and those containing ultramafic xenoliths or roof pendants in the Coast Range batholith are on the mainland east of Admiralty Island (nos 161-164).

### Rare-earth element-bearing veins

Fissure veins containing small amounts of radioactive or rare earth minerals, locally accompanied by base or precious metals, have been prospected or explored in a few places in southeastern Alaska, but there is no public record that any has been successfully mined. Recent geological and geochemical investigations by the USGS in the central part of the Panhandle (Brew and others, 1984; S. M. Karl and J. B. Cathrall, unpub. data) show anomalous U, REE, Be, Mo, Sn, or W in rock and stream-sediment samples near some of the prospects, and throughout large areas underlain by Cenozoic felsic intrusive and volcanic rocks.

Metallogenesis. Except for occurrences associated with emplacement of the Jurassic Bokan Mountain granite, epigenetic veins containing radioactive or rare-earth minerals known in southeastern Alaska either cut Cenozoic rocks, or herein are interpreted to be genetically related to Cenozoic faults or felsic igneous rocks. The metallogenesis and resource potential of the occurrences near the Bokan Mountain granite are summarized in the section of this report describing Magmatic U-Th or REE Deposits.

Epigenetic radioactive- or rare-earth element-bearing veins, locally accompanied by base or precious metals, occur in fault or breccia zones that commonly are subsidiary to major faults (Ghandi, 1980, p. 334-335). The veins may consist mainly of fluorite, calcite, or quartz carrying hematite and small amounts of radioactive, rare-earth, or base or precious metals; or they may be polymetallic assemblages of those metals accompanied by subordinate gangue minerals. The wallrocks near the veins commonly are hydrothermally altered, with development of hematite, chlorite, or clay minerals. The heated (150-400$^{0}$) aqueous mineralizing solutions may be (a) late-magmatic or residual magmatic-hydrothermal solutions derived from granitic intrusions or from felsic volcanic rocks; (b) heated connate or meteoric water that leaches metals and other elements from the country rocks and deposits them in favorable structural or physicochemical sites as ore and gangue minerals; or (c) a combination of (a) and (b). Relatively simple veins similar to those known in southeastern Alaska typically are associated with granitic intrusions or

felsic volcanic rocks.

Mineral assessments of selected tracts. The foregoing summary of metallogenesis suggests 5 main criteria for assessing the potential of geological tracts in southeastern Alaska for epigenetic REE-bearing veins.

1. Occurrence of such veins.
2. Cenozoic felsic intrusive or volcanic rocks.
3. Fault or breccia zones, especially those subsidiary to a major fault.
4. Wall rock alteration marked by such minerals as hematite, chlorite, or clay minerals.
5. Rock or stream sediment samples containing anomalous amounts of radioactive and rare-earth elements, and of Be, F, Mo, Sn, and W.

(1) Favorable tracts. Tracts judged favorable for hosting REE-bearing veins are distinguished chiefly by containing known occurrences of such veins. The two favorable tracts shown on plate 1 (tracts no. 165, 166) are on Prince of Wales Island. Both contain fissure veins that have been prospected for radioactive and rare-earth elements; altered Cenozoic(?) dikes and hematitic wallrock alteration near some of the veins; and adjoin the Clarence Strait fault zone. Rock samples from the northern tract, and samples of sediments from streams draining it, locally contain anomalous amounts of rare-earth elements (S. M. Karl and J. B. Cathrall, unpub. data).

(2) Probably (moderately) favorable tracts). Tracts judged moderately favorable for hosting REE-bearing veins contain known occurrences of fluorite veins in or near Cenozoic felsic volcanic or intrusive rocks; yield rock and stream-sediment geochemical samples anomalous in radioactive, rare-earth, and base metals (S. M. Karl and J. B., Cathrall, unpub. data); and adjoin major fault or fracture zones.

Probably favorable tracts shown on plate 1 include one on Zarembo Island (tract no. 167) that contains fluorite fissure veins and breccia fillings in Cenozoic rhyolite domes and dikes, and which adjoins the Clarence Strait fault zone; and one on the mainland east of Wrangell (no. 73) that contains fluorite-bearing fissure veins and breccia zones in and near a swarm of Cenozoic rhyolite dikes, and which adjoins the Coast Range Megalineament. A fluorite vein in the tract near Wrangell that has been prospected by a short tunnel contains sparsely disseminated molybdenite and geochemically anomalous amounts of silver, lead, and zinc (H. C. Berg and D. Grybeck, unpub. data, 1980).

(3) Possibly favorable tracts. Tracts judged possibly favorable for REE-bearing veins are underlain in part or entirely by Cenozoic felsic volcanic or intrusive rocks, and are distinguished by a regional pattern of rock and stream-sediment geochemical samples that are anomalous in radioactive and rare-earth elements, and in Be, Mo, Sn, and W (S. M. Karl

and J. B. Cathrall, unpub. data). The tracts contain no publicly known occurrences of REE-bearing veins.

Possibly favorable tracts shown on plate 1 include one encompassing parts of Kuiu, Kupreanof, and Zarembo Islands (tract no. 46) underlain chiefly by Cenozoic volcanic and intrusive rocks; and ones on Etolin Island (no. 47) and on the mainland northeast of Wrangell (no. 168) underlain mainly by Cenozoic felsic intrusive rocks.

## Sandstone-hosted uranium deposits

Only trace amounts of radioactive minerals in Tertiary continental sedimentary rocks have been discovered to date in southeastern Alaska. Several large areas of the Panhandle contain outcrops of locally coalbearing Tertiary nonmarine or nearshore strata prospective for these deposits.

Metallogenesis. The formation of sandstone-hosted uranium deposits requires scavenging and transport of uranium under oxidizing conditions by surface and groundwater from mainly felsic igneous source rocks, and deposition of uranium under reducing conditions in such favorable environments as organic-rich continental (nonmarine) sedimentary basins under arid or semiarid climatic conditions (Nash and others, 1981, p. 96-105; Bell, 1981, p. 82). Sandstone-hosted uranium deposits typically are stratabound blanket or channel deposits, or arcuate or stacklike deposits related to chemical or to sedimentary facies controls. The uranium generally is either adsorbed on organic materials, or occurs as pitchblende or coffinite in pore fillings, and is accompanied by vanadium- or phosphorous-bearing secondary minerals.

Mineral assessments of selected tracts. The foregoing summary of metallogenesis suggests 3 main criteria for assessing the potential of geological tracts in southeastern Alaska for sandstone-hosted uranium deposits.

1. Occurrence of such deposits.

2. Occurrence of nonmarine or nearshore clastic sedimentary rocks containing carbonaceous material, pyrite, or other reducing agents.

3. Occurrence of felsic intrusive or volcanic rocks in sediment source-areas.

(1) Probably (moderately) favorable tracts. Tracts judged moderately favorable for sandstone-hosted uranium deposits (a) are underlain by carbonaceous or pyritic Tertiary nonmarine or nearshore clastic strata that locally contain traces of uranium minerals; and (b) adjoin areas underlain by felsic intrusive or volcanic rocks that were the source of much of the sedimentary material deposited in the Tertiary basin. The only moderately favorable tract shown on plate 1 is in the Kuiu-Kupreanof Islands area (tract no. 169).

(2) Possibly favorable tracts. Tracts judged possibly favorable for sandstone-hosted uranium deposits are underlain by locally coalbearing nonmarine or nearshore clastic strata and adjoin sediment source-areas

underlain in part by felsic or intermediate igneous rocks. Such tracts occur on Admiralty (tract no. 170) and Zarembo (no. 171) Islands.

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APPENDIX: Descriptions of metallic mineral deposits in southeastern Alaska

## EXPLANATION

### Column Headings

MAP NO.; NAME OR SITE: Map no. refers to a specific locality in a given quadrangle on Plate 1 and serves to link the map and appendix. The name or site of a deposit, where known, is derived from published sources or from general usage. In some cases more than one deposit is grouped under the same map number.

COORDINATES: For most deposits, approximate location is given in latitude and and longitude to the nearest minute. Locations of some deposits recently examined by USGS geologists are given to the nearest second. The locations of many of the deposits described in the early literature are only vaguely known, and the locations of a few deposits listed in the appendix are to indefinite to plot on Plate 1. A few unverified reported deposits whose positions were copied from generalized maps released by private mining interests were plotted on the map but the appendix does not list their coordinates.

CATEGORY: The categories mine, prospect, claim, and occurrence are used as follows:

M--Mine: a mineral deposit with recorded production. In some cases, ore may have been mined, but not necessarily shipped. Claims may or may not be active.

P--Prospect: a deposit that has been staked and, in most cases, has been scantily explored, but lacks evidence of production. Probably some of the gold deposits that are listed as prospects have had at least meager production, but becuse of lack of substantive evidence they are classified as prospects. Claims may or may not be be active.

C--Claim: a lode or placer deposit for which the only available information consists of a claim reported on U.S. Bureau of Mines claim maps. According to Bureau of Mines usage, the term "lode" refers to any form of mineral deposit other than a placer deposit.

O--Occurrence: a deposit that may or may not be claimed, and is mainly known from published early reports, from recent U.S. Geological Survey, Alaska Division of Geological and Geophysical Surveys, or U.S. Bureau of Mines investigations, or from reliable but otherwise unconfirmed reports released by private mining interests. Unevaluated or unchecked analyses showing apparently anomalous metals in rock geochemical samples are not considered to be mineral occurrences in this report.

FORM OF DEPOSIT: denotes the physical aspect of a deposit, whether, for example, it consists of a vein, disseminated mineral grains, or masses of metallic minerals. The terms used under this heading are intended to be descriptive, and are distinct from genetic terms such as "porphyry" or "volcanogenic", which imply origin or history of deposit. When appropriate, such genetic classifications of mineral deposits and other interpretive information appear in the column headed "Brief description". Because mineral deposits generally are geologically complex, a mine or prospect may

contain more than one form of deposit; in addition, certain forms of deposits may be gradational. The following terms describing forms of deposits are used in this report:

Lode or Placer--U.S. Bureau of Mines claim maps classify mineral occurrences only as lode or placer deposits, without further information about form of deposit

Vein--single or multiple veins of quartz, carbonate, or other gangue minerals containing varying amounts of metallic minerals; also veins of potentially valuable nonmetallic ore minerals such as asbestos and barite. Under this heading, the term vein includes deposits described as individual veins, and as veinlets, stringers, stockworks, fissure veins, breccia lodes, fracture fillings, gash veins, joint facings, and mineralized shear zones

Disseminated--deposits in which potentially valuable minerals occur as individual particles, or as minute veinlets or clusters more or less evenly distributed in the hostrock

Massive--solid masses of potentially valuable minerals in any form, including veins, beds, lenses, etc., essentially free of barren rock or of gangue mainerals such as quartz or carbonate

Stratiform--a deposit having the form of a stratum or layer

Stratabound--a deposit confined to, but not necessarily forming, a stratum, layer, or compositional unit

Float--loose or scattered rock or mineral material whose bedrock source may or may not be known

Stain--discoloration on the surface of an outcrop or lode caused by weathering, oxidation, leaching, or hydrothermal alteration. Stains most commonly are rust-colored ("iron-stain") due to weathering and oxidation of pyrite or other iron minerals; or green or blue due to solution of copper sulfides and redeposition as copper silicate or carbonate ("secondary copper minerals")

RESOURCES: This column lists the produced or potentially valuable mineral commodities known or reported at each locality. Commodities having recorded production are underlined. Commodities are listed in alphabetical order, without implying abundance or commercial value. Commodities are queried when their presence is uncertain, ambiguously described, reported only in unconfirmed accounts, or inferred from indirect evidence. Metallic commodities are shown by standard chemical symbols; nonmetallic commodities are abbreviated by appropriate lower case letters (see "Abbreviations")

BRIEF DESCRIPTION: provides condensed descriptions or interpretations of the geology and mineralogy of the deposits, and in some instances production and historical data. Wherever possible, dollar values for assays or production are converted to tenor or tonnage. When this is not possible (as for combined or cumulative production), dollar values simply are quoted from the original sources, without converting non-metric to metric units.

Information about deposits known only from U.S. Bureau of Mines claim maps generally is limited to number of claims, year staked, and extent of workings, if any

ADDITIONAL REFERENCES: for detailed information about certain relatively well-described deposits, these references supplement the general references cited in the footnote on the first page of descriptions of deposits for each quadrangle. A list of references precedes the appendix

TYPE OF DEPOSIT: this column classifies the lode deposits according to one or more of the nine general types of metalliferous deposits interpreted in this report to occur in southeastern Alaska (p. 24–33). On the map and in the appendix, the nine types of deposits are abbreviated as follows:

| | |
|---|---|
| V | Epigenetic base- or precious-metal vein deposit. Also includes "hydrothermal replacement" deposits in or near veins or fault zones |
| MS, VM, SM | Stratabound or stratiform massive sulfide deposit. Includes metamorphosed hostrocks and deposits. Undivided (letter code MS); volcanic-hosted (letter code VM); sediment-hosted (letter code SM) |
| DS | Disseminated sulfide deposit. Includes stratabound deposits in volcanic, volcaniclastic, or sedimentary rocks, and disseminated sulfide minerals of uncertain origin in plutonic rocks. Includes metamorphosed hostrocks and deposits |
| P | Porphyry deposit |
| S | Skarn or other contact-metamorphic deposit |
| MUR | Magmatic uranium-thorium (U-Th) or rare-earth (REE) deposit |
| MOS | Magmatic oxide or sulfide deposit |
| VR | Rare-earth element (REE)-bearing vein deposit |
| SU | Sandstone-hosted uranium deposit |
| -- | Lode deposits for which public information is absent or inadequate are not classified |

## Abbreviations

| | |
|---|---|
| Standard chemical symbols: | for example, Au, gold; Cu, copper; Fe, iron; etc. |
| PGM | platinum-group metals, mainly palladium, platinum, iridium, etc. |
| RA | radioactive minerals or materials; used when radioactive element is not specified |
| REE | unspecified rare-earth elements |
| sq, cu | square, cubic |
| cm, mm, km, m | centimeter, millimeter, kilometer, meter |
| in, ft, yd, mi | inch, foot, yard, mile |
| oz, lb | ounce, pound |
| ppm | parts per million |
| AA, ss | atomic absorption, semiquantitative spetrographic (geochemical analyses) |
| dissem | disseminated, dissemination |
| fe-st | iron-stained (rusty-weathering) |

MINERALS

act--actinolite
all--allanite
amp--amphibole
ap--apatite
aspy--arsenopyrite
az--azurite
ba--barite
bn--bornite
bt--biotite
calc--calcite
cb--cubanite
cc--chalcocite
ch--chrysocolla
chl--chlorite
cp--chalcopyrite
cr--chromite
cu--cuprite
cv--covellite
dig--digenite
dp--diopside
en--enargite
ep--epidote
fb--freibergite
fl--fluorite
gn--galena
gp--graphite
gr--garnet
gy--gypsum
hem--hematite
hnbd--hornblende
hyp--hypersthene
il--ilmenite
leux--leucoxene
lo--lollingite
mag, mg--magnetite
md--molybdite
ml--malachite
mo--molybdenite
ms--marcasite
musc--muscovite
mz--monazite
or--orpiment
pent--pentlandite
ph--phlogopite
plag--plagioclase
po--pyrrhotite
pow--powellite
py--pyrite
pyr--pyrolusite
pyrt--pyrargyrite
pyx--pyroxene
qz--quartz
rg-realgar
rt--rutile
sb--stibnite
sc--scheelite
sl--sphalerite
sp--spinel
spec--specularite
sph--sphene
td--tetrahedrite
ten--tenorite
th--thorite
tn--tennantite
tr--tremolite
tt--tetradymite
wi--witherite
wl--wollastonite
zr--zircon

APPENDIX
Descriptions of metallic mineral deposits in southeastern Alaska

BRADFIELD CANAL QUADRANGLE
(latitude 56°-57°N, longitude 130°-132°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | 1/BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1 | Spud | 56°29'N, 131°59'W | C | Lode | Ag,Pb,Zn | Replacement in marble | | S(?) |
| 2 | Copper King | 56°28'N, 132°00'W | P | Vein(?) | Ag,Au,Cu, Pb,Zn | Sulfide-bearing vein(?) reported in early 1900's to carry Cu, Zn, and Pb minerals and some Au and Ag | | V; MS(?) |
| 3 | -- | 56°24'N, 131°56'W | C | Lode | Au | -- | | -- |
| 4 | Cone Mt | 56°32'N, 131°45'W | C | Lode | RA,U(?) | -- | | MUR(?) |
| 5, 6, 7 | Deleted | | | | | | | |
| 8a,b | Paper Claims(?) | 56°15'N,131°49'W; 56°14'N,131°48'W | C | Lode | Cu,Fe | Total of ninety-two lode claims | | -- |

1/Geologic descriptions of deposits in the Bradfield Canal quadrangle are adapted mainly from summaries in one or more of the following general references: Berg and others (1981, p. 1-11); Cobb (1972a and 1978a); and Elliott and Koch (1981). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claim map for the quadrangle (U.S. Bureau of Mines, 1978a).

## BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 9 | -- | 56°12'N, 131°47'W | C | -- | -- | -- | | -- |
| 10 | -- | 56°18'N, 131°36'W | C | Lode | Ag,Au,Cu | Ten lode claims | | -- |
| 10a | -- | 56°16'N, 131°36'W | C | Lode | Cu | Cu claims in Kapho Mountains | | -- |
| 11 | -- | 56°07'00"N, 131°10'15"W | O | Dissem | Mo | Small, irregular pods of garnet-diopside skarn contain 1% disseminated mo. | | S |
| 12 | Zimovia | 56°12'N, 131°34'W | C | Lode | RA | Staked in 1956, last work 1957 | | -- |
| 13 | K.A.B. | 56°14'N, 131°30'W | C | Lode | Fe | Staked in 1962, 57 claims | | -- |
| 14 | Waco | 56°18'N, 131°29'W | C | Lode | Ag,Au,Cu | Staked in 1969, ten claims | | -- |
| 15 | -- | 56°15'N, 131°25'W | C | Lode | Au | -- | | -- |
| 16-18 | North Bradfield River | 56°23'-56°24'N, 131°23'-131°25'W | P | Stratiform | Cu,Fe | Crudely stratiform contact metamorphic deposit up to 40 ft thick in marble and paragneiss roof pendant in quartz monzonite contains mag and minor po and cp. Deposit probably averages 50%-65% Fe, and 0.1%-0.5% Cu. 186 ft of diamond drill holes in 1950's | MacKevett and Blake, 1963 | S |

BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 19 | Craig | 56°27'55"N, 131°16'00"W | P(?) | Dissem(?) | Cu | Disseminated(?) cp, py, and po in metasedimentary rocks; cp also in very thin veinlets. Skarn float contains mag and minor cp. Sixty claims recorded in 1977 | | S (?) |
| 19a | -- | 56°23'15"N, 130°59'00"W | O | Float | Mo | Aplite rubble contains up to about 5% disseminated mo | | P(?) |
| 20 | Unuk River | 56°20'N, 130°46'W | O | Vein | Cu | 2 ft vein contains py, po, and cp | | V |
| 21 | -- | 56°20'N, 130°46'W | C | -- | Au | -- | | -- |
| 22 | Boundary | 56°19'N, 130°45'W | C | Lode | Ag,Au | Ten lode claims | | -- |
| 23 | -- | 56°08'N, 130°43'W | O | -- | REE | Accessory sph, all, and opaque minerals in quartz monzonite | | -- |
| 24 | -- | 56°11'N, 130°36'W | O | Vein | Ag | Qz-ep veinlets in hornblende gneiss contain as much as 2.0 ppm Ag | Berg and others, 1977, p. 140 | V |
| 25 | Leduc River | 56°06'N, 130°35'W | O | -- | REE | Accessory all in leucocratic porphyritic granodiorite | | -- |
| 26 | Joker | 56°12'N, 130°28'W | P(?) | Vein | Mo(?) | Qz-calc fissure veinlets in schist carry py and mo(?). Intense iron oxide alteration near aplitic dikes cutting schist | Berg and others, 1977, p. 42, 73, 123 | V(?) |
| 27 | -- | 56°07'N, 130°30'W | O | -- | REE | Accessory all in granodiorite | | -- |

BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 28 | Chickamin River Canyon | 56°02'N, 130°31'W | 0 | -- | REE | Accessory all in leucocratic qz monzonite | | -- |
| 29 | Banded Mountain | 56°02'N 130°27'W | P | -- | Ag(?), Au(?), Pb(?) | Reports of prospecting for Ag, Au, and Pb in early 1900's | | -- |
| 29 | Glacier | 56°02'N, 130°27'W | P | Vein | Ag,Au,Cu, Pb | Qz fissure veins up to a foot thick in graywacke, andesite, and lamprophyre dikes contain py, po, cp, and gn. Assays showed 0.04 oz Au and 6 oz. Ag per ton and 3% Cu. 8 ft tunnel | Buddington, 1929, p. 120-121; Berg and others, 1977, p. 40-41, 114-116 | V |
| 30, 31 | -- | 56°02'N, 130°24'W | P | Vein | Ag,Au,Cu, Pb | Qz pod in Fe-stained metagray-wacke contains po and cp; sample of richest material assayed 1200 ppm Cu and 1.5 ppm Ag | Berg and others, 1977, p. 133 | V |
| 32 | Goat | 56°01'N, 130°25'W | P | Vein | Ag,Au,Cu | Qz-calc veins as much as 15 cm thick in hornfelsed graywacke contain po, cp, and minor Au and Ag | Berg and others, 1977, p. 40-41, 72-73, 114-115 | V |
| 33 | Cub | 56°01'N, 130°25'W | P | Vein | Cu | Po- and cp- bearing qz-calc veins as much as 15 cm thick in banded hornfels and argillite | Berg and others, 1977, p. 40-41, 72-73 | V |
| 34 | Marmot | 56°01'N, 130°21'-130°22'W | P | Vein | Ag,Au,Cu, Mo,Pb,Zn | Qz veins as much as 45 cm thick and massive sulfide stringers as much as 15 cm thick in horn-fels, phyllite, and schist in-truded by dikes. Veins contain py, mo, gn, sl, cp, as much as 5.8 oz Ag per ton, and a trace of Au | Berg and others, 1977, p. 40-41, 60, 70, 72-73, 100-114 | V |

BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 35 | Galena | 56°02'N, 130°20'W | P | Vein | Ag,Cu,Pb, Mo,Zn | Qz fissure veinlets in hornfels contain py, gn, mo, sl, and cp. Composite samples contain 8.7 oz per ton Ag, 0.05% Mo, 0.65% Pb, 0.20% Zn, and 0.03% Cu | Berg and others, 1977, p. 40-41, 112-114 | V |
| 36 | Jumbo (Banded Mtn) | 56°01'N, 130°21'W | P | Vein | Mo,Pb | Qz fissure veins 15-60 cm thick in graywacke, contain py, gn, and mo. | Buddington, 1929, p. 101; Byers and Sainsbury, 1956, p. 140; Berg and others, 1977, p. 40-41, 101 | V |
| 37 | Edelweiss | 56°02'N, 130°21'W | P | Vein | Ag,Au,Pb | Qz fissure vein in bedded rocks contains gn and py. Picked sample assayed 1.55 oz per ton Au and 10.2 oz per ton Ag. No record of production | Buddington, 1929, p. 101; Berg and others, 1977, p. 40-41 | V |
| 38 | Hecla | 56°01'N, 130°20'W | 0(?) | Vein | Ag,Au,Cu, Mo,Pb,Zn | Qz fissure veins up to about 5 ft thick in hornfelsed graywacke, contain py, gn, sl, po, mo, cp, dig, cv, and ml. A ton of ore was shipped in 1925. Picked sample contained 0.08 oz Au and 53.4 oz Ag per ton; and 21.6% Pb, 32.1% Zn, and 4.1% Cu | Buddington, 1929, p. 101-102 | V |
| 38 | Greenpoint | 56°01'N, 130°19'W | P | Vein | Ag,Cu,Mo, Pb | Qz-calc fissure veinlets up to 6 in. thick in hornfels contain py, gn, mo, and cp; and as much as 30 ppm Ag. Little development | Berg and others, 1977, p. 40-41, 93-96 | V |

BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 39 | Cathedral | 56°05'N, 130°17'W | P | Vein | Ag,Au,Cu, Pb,Zn | Qz veins as much as 1-2 m thick in graywacke contain bands of sl, gn, py, po, and cp. Samples of veins contained up to 20.4 oz Ag per ton and a trace of Au. Little development and no record of production | Berg and others, 1977, p. 38-39, 90-91 | V |
| 40 | -- | 56°03'N, 130°17'W | P(?) | Vein | Au,Cu,Pb | Qz-albite vein and qz stringers in metamorphic rocks contain py, gn, and cp; chip sample contained 70 ppm Cu, 80 ppm Pb, 30 ppm Zn, and 0.05 ppm Au | Berg and others, 1977, p. 133-134 | V |
| 41 | -- | 56°02'N, 130°18'W | C | Lode | Ag,Pb | -- | | -- |
| 42 | Chickamin | 56°04'N 130°16'W | P | Vein | Cu,Pb,Zn | Qz fissure veinlets in graywacke contain gn, cp, sl, py, po, and td. Little work | Buddington, 1929, p. 100 | V |
| 42 | Double Anchor | 56°04'N, 130°15'W | P | Vein | Ag,Au,Cu, Pb,Zn | Qz-breccia zones in graywacke and argillite contain qz, py, gn, sl, cp, and po; and an average of 3.5 oz Ag per ton and 0.022 oz Au per ton. A few short adits. No record of production | Buddington, 1929, p. 98-99; Berg and others, 1977, p. 38-39 | V |
| 42 | Dugas, Stampede | 56°04'N, 130°16'W | P | Vein | Ag,Au,Cu, Pb,Zn | Qz fissure veins and sulfide stringers in brecciated graywacke, slate, and aplite contain gn, sl, cp, small amounts of Ag, and a trace of Au. Little development | Buddington, 1929, p. 99; Berg and others, 1977, p. 38-39, 79-80 | V,S(?), MS(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 42 | Marietta | 56°06'N, 130°16'W | M | Vein(?) | Au,Ag,Cu, Pb | 300-400 oz of Au and electrum was produced before WWII probably from auriferous qz or sulfide fissure veins mined by tunneling under glacier | Berg and others, 1977, p. 37-39, 76-78 | V |
| 42 | Silver King | 56°04'N, 130°16'W | P(?) | Vein | Ag,Au,ba, Cu,Pb,Zn | Qz fissure vein 6-30 in. thick in graywacke and slate contains 2-8 in. of massive sl, gn, py, cp, td, aspy, and ba. Sample reported to have assayed 1.28 oz Au per ton, 5.96 oz Ag per ton, 55.2% Pb, and 2.2% Cu | Buddington, 1929, p. 99-100 | V |
| 43 | Lakeside | 56°03'N, 130°16'W | P | Vein | Ag,Pb | Qz veins 30 cm thick in granodiorite contain py and gn | Berg and others, 1977, p. 38-39, 72, 84-87 | V |
| 44 | Hummel Canyon | 56°03'N, 130°17'W | P | Massive(?) | Ag(?) | Pyritic silicified zone in banded hornfels. 3.4 adit | Berg and others, 1977, p. 40-41, 86-87 | MS(?) |
| 45 | Blasher | 56°03'N, 130°16'W | P | Vein; dissem | Ag,Au,Cu Mo,Pb,Zn | Qz vein 12-61 cm thick in siliceous hornfels, and in qz monzonite contains cp, gn, sl, po, py, and mo. Short drift, pits and 4 diamond drill holes in 1970's. No recorded production | Buddington, 1929, p. 100; Berg and others, 1977, p. 38-39, 85-89 | V |
| 45 | Lake | 56°03'N, 130°17'W | P | Vein | Cu,Pb | Qz fissure vein about 11 in. thick in granodiorite contains gn, py and cp | Buddington, 1925, p. 74; 1929, p. 101; Berg and others, 1977, p. 38-39 | V |
| 45 | Morning | 56°04'N, 130°16'W | P | Vein | Pb | Qz vein 2-4 ft thick in granodiorite contains py and gn | Buddington, 1929, p. 101 | V |

BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 46 | Hyder Lead | 56°03'N, 130°15'W | P | Vein | Ag,Au,ba, Cu,Mo,Pb Zn | Qz-ba-calc fissure veins in quartz diorite and in graywacke and tuff country rocks contain gn, py, cp, sl, po, td, and mo. Assays of samples showed 3.6-16.9 oz Ag and trace to 0.18 oz Au per ton. Veins in qz diorite are generally leaner than those in bedded rocks. Surface exploration. No record of production | Buddington, 1925, p. 91-93; 1929, p. 102-108 | V |
| 47 | Swennings Greenpoint | 56°01'N, 130°16'W | O | Vein | Ag,Mo,Pb | Qz veins in hornfels contain gn and mo; as much as 100 ppm Ag | Berg and others, 1977, p. 40-41, 92-93 | V |
| 48 | Keno | 56°02'N, 130°14'W | P | Vein; dissem | Ag,Au,ba, Cu,Pb,Zn | Qz-ba fissure veins in granodiorite contain masses up to 7 in. thick of gn, py, cp, sl, and td. Specimen contained 0.6 oz per ton Au and 3 oz per ton Ag. Little work | Buddington, 1925, p. 94; 1929, p. 108 | V |
| 49 | Juneau | 56°01'N, 130°13'W | P(?) | Vein | Cu,Pb | Qz veins 3-6 ft wide in granodiorite contain gn, py, and a few small masses of cp. Little development | Buddington, 1929, p. 108-109 | V |
| 49 | Sunset | 56°01'N, 130°13'W | P | Vein; dissem | Pb | Qz veins up to 3 ft thick in granodiorite. Locally contain lenses up to 12 ft long of massive py, gn, and ba. Minor surface stripping | Buddington, 1929, p. 109 | V |

## BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 50 | Bevaque | 56°03'N, 130°13'W | 0 | Vein | Ag,Au,Pb | Sulfide-bearing qz vein reported to be as much as 3.5 ft thick said to yield good assays in Au, Ag, and Pb | Buddington, 1926, p. 53 | V |
| 50 | Engineer | 56°03'N, 130°13'W | P | Vein | Ag,Au,Cu, Pb,W | Qz vein 2-4 ft thick in granodiorite contains sparse sc and small masses of cp, py, and gn. Assays of masses showed 0.04-0.64 Au per per ton, 7.6-26 oz Ag per ton, and 11.3-55.3% Pb. 30-ft adit | Buddington, 1929, p. 109-110; Byers and Sainsbury, 1956, p. 127 | V, S(?) |
| 50 | Jumbo (Texas Cr.) | 56°03'N, 130°13'W | 0 | Vein; dissem | Cu,Pb,Zn | Qz veins up to 2 ft thick in intersecting fault zones and breccias in graywacke roof pendant in granodiorite contain gn, py, cp, and sl. Some of country rock contains disseminated py and cp | Buddington, 1929, p. 111 | V |
| 50 | North Star | 56°03'N, 130°13'W | P(?) | Vein | Pb | Qz fissure vein up to 2.5 ft thick in graywacke near contact with granodiorite contains small masses of gn and py | Buddington, 1929, p. 110 | V |
| 51 | Hummel | 56°04'N, 130°13'W | P | Vein | Ag,Au,Cu, Pb,Zn | Qz and sulfide fissure veinlets in zone up to 2 ft wide in argillite and slate contain gn, py, cp, and td. Sample of sl contained a little Au and 22.78 oz Ag per ton. Little exploration | Buddington, 1929, p. 48, 98 | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 52 | Iron Cap | 56°04'N, 130°12'W | P | Vein | Ag,Au,Cu, Zn | Qz and sulfide fissure veins up to 2 ft thick in 11 ft wide zone slate and in graywacke above contact with granodiorite contains po, cp, sl, and aspy. Sample assayed 0.04 oz Au per ton, 6.28 oz Ag per ton, and 2% Cu. Little exploration | Buddington, 1925, p. 95; 1929, p. 98 | V, MS(?) |
| 52 | Silver Bell | 56°04'N, 130°12'W | O | Vein | Ag(?),Cu, Pb,Zn | Qz fissure vein up to 2 ft thick in brecciated argillite and graywacke contains disseminations and small masses of py, cp, gn, sl, and td | Buddington, 1929, p. 44 | V, MS(?) |
| 52 | Silver Star | 56°04'N, 130°12'W | P | Vein | Au,Pb,Zn | Qz veins and veinlets in granodiorite and argillite contain gn, py, sl, po, aspy, and fb. Picked sample said to have yielded an ounce of Au per ton. 30 ft adit | Buddington, 1925, p. 89-90; 1929, p. 97 | V |
| 52 | Texas Discovery | 56°04'N, 130°12'W | O | Vein | Ag,Au,Cu, Pb | Qz fissure vein up to 14 in. thick in granodiorite contains py, gn, po, and cp. Assay of picked sample said to have shown 30% Pb, about 1.06 oz Au per ton, $6 in Ag per ton | Buddington, 1925, p. 74; 1929, p. 98 | V |
| 53 | Evening Star | 56°05'N, 130°10'W | P | Vein | Pb | Stringer of gn in granodiorite. 10-ft adit | Buddington, 1925, p. 90; 1929, p. 94 | V |

BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 53 | Homestake | 56°05'N, 130°10'W | M | Vein | Ag,Au,Cu, Pb,Zn | Qz fissure vein up to 5 ft thick in granodiorite contains gn, cp, py, and sl. Test shipment of 9.5 tons of sorted ore contained 50% Pb, 0.7% Zn, 22.87 oz Ag per ton, and 0.29 oz Au per ton. Little work since early 1900's | Buddington, 1925, p. 88-89; 1929, p. 94 | V |
| 53 | Ibex | 56°05'N, 130°10'W | P | Vein | Ag,Cu,Pb, Zn | Qz fissure vein up to 2 ft thick in argillite and quartzite and in granite porphyry and granodiorite dikes contains sl, gn, py, cp, and td. Assays of picked samples showed high content of Ag, Cu, and Pb. 130-ft crosscut in early 1900's | Buddington, 1925, p. 88-89; 1926, p. 53-54; Buddington and Chapin, 1929, p. 317, 324 | V |
| 53 | Silver Coin | 56°05'N, 130°10'W | O | Vein | Cu,Pb | Qz fissure vein up to 5 ft thick in granodiorite contains gn, py and cp | Buddington, 1925, p. 90; 1929, p.95 | V |
| 54 | Liberty | 56°03'N, 130°10'W | P(?) | Vein | Pb | Qz vein, as much as 2 ft thick in granodiorite contains small masses of gn | Buddington, 1929, p. 93-94; Byers and Sainsbury, 1956, p. 140 | V |
| 54 | Nothiger | 56°03'N, 130°10'W | P | Vein | Pb | Qz fissure veins up to 6 ft thick in granodiorite contain gn and py. Short crosscut | Buddington, 1929, p. 94 | V |
| 55 | Silver Bar | 56°04'N, 130°08'W | O | Vein | ba,Cu,Pb | Qz fissure vein as much as 3 ft thick in granodiorite locally contains small masses of cp, gn, py, and ba | Buddington, 1925, p. 88; 1929, p. 93 | V |

## BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 56 | Bartholf | 56°05'N, 130°04'W | P(?) | Vein | Cu,Pb | Qz vein as much as a foot thick in granodiorite contains disseminations and small masses of cp, py, and gn | Buddington, 1929, p. 92-93 | V |
| 56 | Cantu | 56°05'N, 130°04'W | M | Vein | Ag,Au,ba, Cu,Pb,Zn | Qz veins up to 3 ft thick in granodiorite cut by qz porphyry dikes contain gn, sl, td, py, cp, and ba. 20-ton test shipment in 1925 of best ore contained 0.175-0.30 oz Au per ton, 13.80-31.05 oz Ag per ton, 37.2-44.1% Pb, and 5.6-12.2% Zn. No record of any other production | Buddington, 1929, p. 91-92; Buddington and Chapin, 1929, p. 324 | V,P(?) |
| 57 | Charles, Nelson & Pitcher | 56°03'N, 130°04'W | O | Dissem | Ag,Au,Cu, Pb,Zn | Sl, gn, py, and cp disseminated in sheared silicified porphyry. Assays reported to show small quantities of Au and Ag | Westgate, 1922, p. 129 | P(?) |
| 57 | Ninety-six | 56°03'N, 130°04'W | P | Vein | Cu,Pb,Zn | 5 ft thick qz-breccia vein in granodiorite dike in slate and quartzite contains gn, sl, td, py, and cp. 63 ft adit. No record of production | Buddington, 1925, p. 87; 1929, p. 93 | V |
| 58 | Border | 56°03'N, 130°03'W | P | Vein | Cu,Pb,Zn | Qz fissure veins in slate and graywacke between granodiorite porphyry dikes contain qz and and masses up to 6 in. thick of gn, sl, py, and cp. 70 ft adit | Buddington, 1929, p. 90 | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 58 | Gold Cliff Premier | 56°03'N, 130°03'W | O | Vein | Ag,Au,Cu, Pb,Zn | Qz-calc fissure veins in pyritic sheared hornfels and slate cut by porphyry dikes contain gn, sl, cp, td, and po. Assays in early 1900's showed as much as 1 oz Au per ton and 4 oz Ag per ton | Buddintgon, 1929, p. 90 | V |
| 59 | Bluebird | 56°01'N, 130°04'W | O | Vein | Cu,Pb,Mo,W | Qz vein 4 in. thick in granodiorite contains disseminated py, cp, gn, sc, and mo. Sample contained an estimated 0.5% $WO_3$ | Byers and Sainsbury, 1956, p. 139-140 | V, S |
| 59 | Brigadier | 56°01'N, 130°04'W | P | Vein | Ag,Au,Pb,W | Qz veins up to 3 ft thick in granodiorite contain Au, Ag, gn, py, and rare grains of sc. Assays of two samples indicated 11.4-14.1% Pb, 0.24-0.6 oz Au per ton, and 10.2-20.6 oz Ag per ton. 25 ft shaft in late 1920's | Buddington, 1929, p. 81; Byers and Sainsbury, 1956, p. 140 | V, S |
| 59 | Crest | 56°01'N, 130°04'W | P | Vein; dissem | Au,Cu,Pb | Qz veins and stringers in fissure zone in granodiorite carry gn, py, a little cp, and free Au. Wallrock locally contains disseminated py. Some stringers assayed as much as 5 oz Au per ton. Surface exploration | Buddington, 1929, p. 81-82 | V, P(?) |
| 59 | Cripple Creek | 56°01'N, 130°04'W | P | Vein; dissem | Cu,Pb,Zn | Large qz vein in sheeted zone in granodiorite, breccia with qz veinlets in py-impregnated granodiorite, and several fissure zones in granodiorite contain py, gn, sl, cp, and td. 45 ft adit and short crosscut. No data on probable content of Au and Ag | Buddington, 1929, p. 83-84 | V, P(?) |

BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 60 | Alaska-Premier | 56°02'N, 130°03'W | P | Vein | Ag,Au,Cu Pb,W(?),Zn | Qz veins in shattered qz porphyry sills or layers contain py, sl, gn, po, cp, td, aspy, Au, and sc(?). Assays show as much as 35 oz per ton Au in some veins, and about 0.097-0.145 oz Au per ton and about 1 oz Ag per ton in some of the porphyry | Buddington, 1925, p. 74; 1929, p. 85-86 | V, P(?), S(?) |
| 60 | Bertha | 56°02'N, 130°03'W | P | Dissem | Cu,Pb,Zn | Disseminated py, cp, gn, and sl in a lode at least 15 ft wide in silicified schistose tuff | | DS |
| 60 | Daly-Alaska | 56°02'N, 130°03'W | M(?) | Dissem; vein | Ag(?),Au, Cu,Pb,Zn | Qz-calc and sulfide veins in shear zones in silicified and pyritized greenstone and granodiorite porphyry contain py, po, sl, gn, td, fb, cp, and aspy. Picked samples contained a little Au and as much as 500 oz Ag per ton. A little native Ag was found in one of the workings. Several hundred feet of underground workings in early 1900's; a little ore may have been mined | Westgate, 1922, p. 128, 131-133; Buddington, 1925, p. 83-84; 1929, p. 86-88 | V, P, DS |
| 60 | Hobo | 56°02'N, 130°03'W | P | Vein, massive(?) | Ag,Au,Cu, Pb,Zn | Qz and sulfide fissure or replacement veins in greenstone(?) contain py, po, sl, cp, gn and aspy. Sulfides from one vein assayed 0.2 to 0.58 oz Au per ton. Opencuts | Buddington, 1929, p. 84-85 | V, MS(?) |
| 60 | Iron | 56°02'N, 130°03'W | M | Vein(?) | Ag,Cu,Pb, Zn | Small masses of cp, sl, and gn are rich in Ag. One ton of ore mined in in 1915 | | V(?) |

BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 60 | Portland | 56°02'N, 130°03'W | P(?) | Vein | Cu,Pb,Zn | Qz vein about 3 ft thick in slate, contains sparse disseminations and small blebs of py, gn, sl, and cp. Surface exploration | Buddington, 1929, p. 84 | V |
| 60 | Swede | 56°02'N, 130°03'W | P(?) | Massive(?), dissem | Ag(?),Au(?), Cu,Pb,Zn | Greenstone contains disseminations and possibly veinlike small masses of py, gn, sl, cp and po | Buddington, 1925, p. 74 | MS(?), DS |
| 60 | Western | 56°02'N, 130°03'W | P(?) | Dissem; massive(?) | Cu,Pb,Zn | Disseminated py, cp, gn, and sl in a lode at least 15 ft wide in silicified schistose tuff | | MS(?) |
| 61 | Stoner | 56°02'N, 130°02'W | P | Vein; dissem; massive(?) | Ag,Au,Pb, Zn | Py, sl, gn, td and po occur in: (1) qz-calc veins and disseminated deposits in greenstone; (2) qz fissure veins in or near contacts between slate and granitic dikes; and (3) seams, disseminations, and sulfide-coated fracture facings in qz porphyry dikes. Up to about 0.5 oz Au and 20.5 oz Ag per ton reported in early 1900's. 15 ft shaft | Westgate, 1922, p. 131-132; Buddington, 1925, p. 74, 83; 1929, p. 43, 89-90 | P(?), MS(?) |
| 61 | Stoner-Clegg-O'Rourke | 56°02'N, 130°02'W | P | Vein; dissem; massive(?) | Cu,Pb,Zn | Calc veinlets in greenstone contain sl, py, gn, po, cp, and td. Some of greenstone contains disseminated py and po. 75 ft tunnel | Buddington, 1929, p. 88 | MS(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 61 | Virginia | 56°02'N, 130°02'W | P | Vein; massive(?); dissem | Au,Cu,Pb, Zn | Lenticular body of nearly solid sulfides in shear zone several feet wide in greenstone contains po, sl, py, and a little gn and td in qz gangue. Selected samples have yielded as much as 4.5 oz Au per ton. 300 ft of crosscut and drifts. Elsewhere on property greenstone contains disseminated gn, py, sl, cp, and po | Buddington, 1925, p. 74; 1929, p. 88-89 | S, MS(?) |
| 62 | Riverside | 56°00'N, 130°04'W | M | Vein | Ag,Au,Cu, Pb,W,Zn | Lindeborg lode is in Texas Creek Granodiorite and is partly a qz fissure vein and partly a replacement deposit containing sc, gn, py, td, po, cp, sl, and Au. Production from 1925 to 1951 was about 30,000 tons of ore that yielded about 3,000 oz Au, 100,000 oz Ag, 100,000 lbs Cu, 250,000 lbs Pb, 20,000 lbs Zn, and 3,500 units (70,000 lbs) $WO_3$. More than 6,000 ft of underground workings | Buddington, 1925, p. 74-75, 79-82; 1929, p. 77-81; Thorne and others, 1948, p. 36-44; Byers and Sainsbury, 1956, p. 125-136; Smith, 1977, p. 17-18 | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 63 | Fish Creek | 56°00'N, 130°03'W | M | Massive(?); dissem; vein | Ag,Au,Cu, Pb,Zn,W | (a) Greenstone contains body of massive(?) po accompanied by minor py, aspy, cp, and qz; assays show 0.36 oz Au per ton, and 4 oz Ag per ton<br><br>(b) Qz fissure vein as much as 10 ft thick in granodiorite contains disseminations and stringers of massive td, cp, and aspy. Assays in early 1900's showed up to 1.42 oz Au per ton, 94.8 oz Ag per ton, 14.5% Pb, and 2% Cu. About 800 ft of underground workings. Total production not known. | Westgate, 1922, p. 128, 134-138; Buddington, 1929, p. 68-71; Byers and Sainsbury, 1956, p. 138 | V, S, P(?), MS(?) |
| 63 | Last Chance | 56°00'N, 130°03'W | M | Vein | Ag,Au,Cu, Pb,W,Zn | Qz vein as much as 4 ft thick in granodiorite contains gn, td, cp, sl, and sc. Small test shipment of ore in 1935 carried Au and Ag. About 850 ft of underground workings | Byers and Sainsbury, 1956, p. 139 | S, V |
| 63 | Monarch | 56°00'N, 130°03'W | P | Vein | Ag,Au,ba, Cu,Pb,W,Zn | Qz veins in granodiorite contain sparse sc and, locally, ba and masses of gn, py, td, sl, and cp. Samples from one vein contained as much as 1.5 oz Au per ton. Little development | Buddington, 1929, p. 74-75; Byers and Sainsbury, 1956, p. 139 | S, V |
| 64 | Hyder Skookum | 56°01'N, 130°02'W | P | Massive(?); dissem; vein | Cu | Body of massive sulfide in semi-schistose greenstone near contact with porphyry dike contains po, cp, and aspy. Little development | Buddington, 1929, p. 72 | V, MS(?) |

BRADFIELD CANAL QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 64 | Titan | 56°02'N, 130°03'W | P | Vein; dissem(?); massive(?) | Ag,Au,Cu, Pb,Zn | Qz veins up to 2 ft thick in a shear zone in an altered pyritiferous porphyry dike contain sl, gn, py, and cp; picked samples from outcrop said to carry considerable Au and Ag. Shear zone in greenstone nearby carries aspy and gn. Explored in early 1900's by about 500 ft of adit and crosscuts. No record of production | Buddington, 1925, p. 74; 1929, p. 72-74 | V, P(?), MS(?) |

CRAIG QUADRANGLE
(latitude 55°-56°N; longitude 132°-134.40°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | [2/]BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1 | Coronation Island | 55°55'N, 134°21'W | M | Vein | Pb,Zn | Small, lenticular masses of gn, sl, td, and secondary Fe, Pb, and Zn, minerals in clay-carbonate gangue in fault zones as much as 4 ft wide in Paleozoic limestone or marble locally cut by diorite. 3 masses mined in early 1900's and more than 100 tons of ore shipped | Wright and Wright, 1908, p. 190-191; Twenhofel and others, 1949, p. 38-40. | V |
| 2 | Tokeen | 55°59'N, 133°27'W | O | Vein | Pb | Small gn-bearing vein; probably near contact between diorite and calcareous sedimentary rocks | | V |
| 3 | -- | 55°56'N, 133°11'W | C | Lode | Fe | Twenty-one lode claims from 1959 to 1968 | | -- |

[2/]Geologic descriptions of deposits in the Craig quadrangle are adapted mainly from summaries in one or more of the following references: Berg and others (1981, p. 12-36); and Cobb (1972b and 1978b). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claim map for the quadrangle (U.S. Bureau of Mines, 1978b).

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 4 | McCullough | 55°59'N, 133°00'W | M(?) | Vein | Cu,Zn | Qz breccia vein about 10 ft wide that crops out over a distance of 350 ft, contains cp, and smaller amounts of py, sl, and secondary Cu minerals. Country rock is banded argillite and graywacke, also occuring as fragments in vein. Developed by 61 ft shaft and opencuts. Four ton test shipment about 1905(?). Samples of vein contained 0.7-3.3% Cu | Twenhofel and others, 1949, p. 13-15 | V |
| 5 | -- | 55°49'N, 133°10'W | C | Lode | Au | Seven lode claims on Tuxekan Island | | -- |
| 6 | Noyes Island | 55°32'N, 133°39'W | O | Vein | Cu,Mo,Ni | Qz veins, probably at contact between a pluton and bedded rocks, contain po, and cp. Analysis of po showed 0.1-0.2% Ni, a trace of Co, no Au or Pt metals. Mo occurs in schist on island, no other data on occurrence | | V |
| 7 | Cape Addington | 55°27'N, 133°49'W | O | Dissem(?) | Cu | Cp in marble; Cu-stained tactite nearby | | S |
| 8 | -- | 55°29'N, 133°38'W | O | Vein | Cu | Qz-cp pod, probably in argillite | | -- |
| 9 | St Ignace Island | 55°25'N, 133°25'W | O | Vein | ba | Narrow stringers of ba in fissure vein in sandstone and conglomerate | | V |
| 10 | -- | 55°23'N, 133°25'W | C | -- | ba | Claim on St. Ignace Island | | -- |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 11 | Port San Antonio | 55°21'N, 133°35'W | P | Vein | Au(?),Pb, Zn | Stockwork of qz veinlets in argillite contains sl, gn, py, and reportedly high values in Au. Open cuts | | V |
| 12 | -- | 55°20'N, 133°36'W | C | Lode | Mo | Lode claims near Mt. Miramar on Baker Island | | -- |
| 13 | Baker Island | 55°19'N, 133°05'W | O | Vein | Au(?),Mo | Intensely brecciated and silicified zones in qz diorite and metasedimentary rocks contain many qz veinlets that carry mo and small amounts of py, aspy, and po; possibly a little Au. Probably less than 0.05% mo | Twenhofel and others, 1946, p. 31-36 | P |
| 14 | -- | 55°25'N, 133°15'W | O | Lode | Cu | Minor py and cp in diorite | | P(?) |
| 15 | -- | 55°24'N, 133°18'W | O | Lode | Cu | Py, po, and cp in tactite | | S |
| 15 | -- | 55°24'N, 133°18'W | O | Lode | Cu | Py and cp in diorite | | P(?) |
| 15 | -- | 55°24'N, 133°18'W | O | Vein | Zn | Py-sl veinlet, probably in hornfels | | V |
| 16 | -- | 55°17'N, 133°14'W | C | Lode | Au | -- | | -- |
| 17 | -- | 55°16'N, 133°38'W | O | -- | Cu | Py-po and cp in quartzite | | -- |
| 17 | -- | 55°16'N, 133°38'W | O | -- | Cu | Py and minor cp in phyllite | | -- |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 18 | -- | 55°38'N, 132°53'W | C | Lode | Cu | -- | | -- |
| 19 | -- | 55°37'N, 132°54'W | C | -- | barite, Cu | -- | | -- |
| 19a | Black Bear Lake | 55°31'N, 132°50'W | O | Dissem; vein | Cu | Disseminations, veins, joint coatings of po, cp, and bn(?) in diorite or "propylitized andesite". Diamond drillhole at proposed damsite east of Klawock | R. Wannamaker, written commun., 1983 | P(?) |
| 19b | Pin Peak | 55°31'N, 132°50'W | O | Dissem(?) | Cu,Mo | Disseminated(?) sulfide minerals in diorite | AEDIC, 1982 | P(?) |
| 20 | -- | 55°32'N, 132°59'W | C | Lode | Ag,Au | -- | | -- |
| 21 | Saxe | 55°32'N, 132°55'W | P | Vein; dissem | Ag,Au,Cu, Pb,Zn | Qz-carbonate vein and many stringers in andesite porphyry breccia contain abundant gn, py, and sl, traces of cp; and as much as 0.07 oz Au and 1.96 oz Ag per ton. Country rock between stringers contains disseminated py; fracture surfaces coated with po-bearing qz. Little development and no known production | | V, MS(?) |
| 22 | -- | 55°37'N 132°48'W | C | Lode | Cu,Fe | -- | | -- |
| 23 | -- | 55°35'N, 132°50'W | C | Lode | Ag,Au | Fourteen lode claims on ridge north of Black Bear Lake | | -- |

## CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 24 | Constitution | 55°32'N, 132°48'W | P | Vein | Au,Cu,Pb, Zn | Fissure vein in gabbro and amphibolite contains Au (average tenor about 1 oz per ton), py, cp, gn, and sl. Tunnel driven 130-ft on vein that ranged from 5 in. to 4 ft. thick. No record of production | | V |
| 25 | Dew Drop | 55°31'N, 132°49'W | P | Vein | Ag,Au | Fissure vein 6-14 in. thick along a fault in a basic intrusive rock is reported to carry values in Au and Ag | Herreid and Rose, 1966, p. 16 | V |
| 25 | Independent | 55°31'N, 132°49'W | P | Vein | Au,Pb,Zn | 2 claims. Lower claim is on a foot-thick qz-calc vein in a shear in andesite porphyry. Vein contains gn, py, and sl. Upper claim is on 1-2 ft wide similar vein. Very high Au assays reported. Some Au may have been produced in early 1900's | | V |
| 25 | Rose | 55°31'N, 132°49'W | P | Vein | Ag,Au | Vein 6-14 in. wide along a fault in a basic intrusive rock is reported to carry Au and Ag values. Other veins in area carry gn, py, cp and Au. A little development in early 1900's | Herreid and Rose, 1966, p. 16 | V |
| 25 | Summit | 55°31'N, 132°49'W | P | Vein | Ag(?), Au(?) | Qz fissure veins in a porphyry dike carry gn, py, cp and Au. A little work in early 1900's | Herreid and Rose, 1966, p. 16 | V |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 26 | Lucky Nell | 55°31'N, 132°49'W | M | Vein | Ag,Au,Cu, Pb,Zn | Qz fissure vein about 4 ft thick in diorite porphyry contains py, cp, gn, and sl; and values in Au, and Ag. Sulfides comprise more than half the vein in places. Almost 1,000 ft of drifting on several levels, a raise, and a winze. About 70 tons of ore shipped in early 1900's. Shipment of 30 tons of ore in 1914 netted $33 combined Au and Ag per ton | Wright and Wright, 1908, p. 162-163; Herreid and Rose, 1966, p. 16 | V |
| 26 | Gervis | 55°31'N, 132°49'W(?) | P | Vein(?) | Au(?) | Reports of auriferous lode prospected in 1911 | Herreid and Rose, 1966 p. 16 | V(?) |
| 27 | Snowdrift | 55°29'N, 132°45'W | P | Vein | Au(?) | Qz(?) vein reported 2 ft wide. Short adit in early 1900's. Au content, if any, is low | Herreid and Rose, 1966, p. 11 | V(?) |
| 28 | -- | 55°28'N, 132°46'W | C | Lode | Au,Cu,Pb | -- | | -- |
| 29 | -- | 55°28'N, 132°59'W | O | -- | Cu | Minor cp in greenstone | | -- |
| 30 | -- | 55°28'N, 132°44'W | C | Lode | Ag,Au,Cu | -- | | -- |
| 31 | -- | 55°27'N, 132°44'W | C | Placer | Au | Placer claim on the Harris River | | Placer |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 32 | Dawson | 55°28'N, 132°42'W | M | Vein; dissem | Ag, Au, Cu, Pb, Zn | Qz stringers and veins in black graphitic slate in a zone from 2 to more than 6 ft wide. Most values in free Au concentrated along contacts of qz stringers and country rock; sulfides (scattered in qz and country rock) include py, sl, cp, and gn; pyritized dikes parallel and crosscut lode. Mineral-mass constitutes low-grade ore; only higher grade shoots were mined. Developed to a depth of at least 600 ft from 1900-1948, probably produced several thousand oz each of Au and Ag, and some Pb. | Herreid and Rose, 1966 p. 10-14 | V, MS(?) |
| 33 | Crackerjack | 55°29'N, 132°42'W | M | Vein | Ag, Au, Cu, Pb, Zn | Qz veins as much as 5 ft thick mainly follow one or more porphyry dikes parallel to bedding of black slate country rock. Metallic minerals are py, cp, gn, sl, td; Au and Ag. Unknown amount of production, probably mainly of Au and Ag; more than 2,500 ft of underground workings | Wright and Wright, 1908, p. 160-161; Herreid and Rose, 1966, p. 11-12 | V |
| 34 | Copper Hill | 55°30'N, 132°41'W | P | Vein; dissem(?) | Au(?), Cu | Network of cp veinlets enclosing sheared rock impregnated with cp in shear zone in greenstone tuff; reported to carry Au as well as Cu. Small amount of work in 1900 and 1916; no record of any production | Herreid and Rose, 1966, p. 16 | V, DS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 35 | Cascade | 55°30'N, 132°42'W | M | Vein | Ag,Au,Cu, Pb,Zn | Qz lenses and veinlets in a fracture zone in an altered mafic intrusive rock contained free Au, py, sl, gn, and cp. Sample of qz lens in a tunnel contained 0.24-0.50 oz Au and 0.4-0.7 oz Ag per ton. An unknown but probably small amount of Au was mined in early 1900's. 300 ft of tunnels | Wright and Wright, 1908, p. 161-162; Herreid and Rose, 1966, p. 14-15 | V |
| 35 | Puyallup | 55°30'N, 132°42'W | M | Vein | Ag,Au,Cu, Pb,Zn | Qz vein from a few inches to several feet thick follows hanging wall of a thin porphyritic dike. Vein contains free Au, py, gn, sl, cp, bn, and (reportedly) tellurides. Au as high as 53.2 oz per ton reported. Mine consisted of several adits, drifts, a shaft, open cuts, and stopes. Unknown, but considerable production from intermittent mining from 1901 to at least 1940 | Wright and Wright, 1908, p. 159-160; Herreid and Rose, 1966, p. 11 | V |
| 35 | -- | 55°29'N, 132°44'W | P | Vein | Ag,Au,Cu, Pb,Zn | Qz vein in granodiorite is 1/2 to 3 in. wide; contains gn, sl, cp, and py. Assay showed 0.88 oz Au and 5.88 oz Ag per ton. Adit | Herreid and Rose, 1966, p. 15 | V |
| 36 | Burke & Lange | 55°29'N, 132°39'W | P | Vein | Au(?) | Qz vein about 20 ft wide parallel to strike of enclosing greenstone tuff. No data on metallic mineral content, if any | Herreid and Rose, 1966, p. 16 | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 37a | Monday | 55°30'N, 132°35'W | P | Vein | Ag,Au,Pb | Qz-vesuvianite vein in shear zone in slate carries gn, py, and (reportedly in 1901) $5-$8 in Au and 15-40 oz Ag per ton. Vein exposed by open cuts; sheared andesite dike forms one wall of vein in one cut | Herreid and Rose, 1966. p. 16 | V,S(?) |
| 37b | Stella | 55°30'N, 132°38'W | P | Vein | Au(?),Pb, Zn | Qz vein about 3 ft thick with gouge along one wall follows contact between a diorite porphyry dike and black slate; contains py, gn, sl, and low values in Au(?) | | V |
| 38 | -- | 55°31'N, 132°43'W | Q | Vein | Cu,Pb | 100-ft-wide zone probably in black slate or argillite contains thin qz-carbonate veins carrying po, cp, and gn | Herreid and Rose, 1966, p. 26 | V |
| 39 | Buckhorn | 55°32'N, 132°41'W | P | Vein | Au | Qz fissure vein averaging 15 in. thick in a granitic pluton has been traced for several miles. Several tunnels and open cuts. No known production | Herreid and Rose, 1966, p. 17 | V |
| 39 | Clipper | 55°32'N, 132°41'W | P | Vein | Au | Vein 8-18 in. thick in altered and decomposed diabase dike in granite. Similar to veins at Flagstaff (no. 40), which carry free Au and sulfides. Short tunnels | do | V |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 39 | Cutter, Go-By, Juneau | 55°33'N, 132°41'W | P | Vein | Au(?) | Group of claims on north side of Granite Mountain reported to carry good Au values; similar to nearby qz fissure veins in granitic rock that carry free Au and sulfides | Herreid and Rose, 1966, p. 26 | V |
| 39 | Lucky Find | 55°32'N, 132°42'W | P | Vein | Au(?),Cu | Four claims located on a 1-ft thick vein between a diabase dike and granite; gouge on both sides of vein. Vein carries py, cp, and possibly Au; gangue is qz, calc, and siderite(?). Explored by a 50-ft tunnel in early 1900's. | do | V |
| 39 | Lucky Jim | 55°32'N, 132°42'W | P(?) | Vein | Au(?),Cu, Pb | Qz vein, probably in granite contains py, gn, ml, az, and possibly Au. Little if any development | do | V |
| 40 | Flagstaff | 55°32'N, 132°40'W | M | Vein | Ag,Au,Cu, Pb,Zn | Qz fissure vein can be traced on surface for more than a mile through a vertical range of at least 1,300 ft; in mine workings is about 18 in. thick, and follows the footwall of a diabase dike; country rock is diorite. Vein is mainly qz with Au, gn, cp, py, sl, cv, sooty cc, and native Cu. Mine operated intermittently from 1905-1941; workings included more than 1,200 ft of tunnels and stopes. Total production not known | Twenhofel and others, 1949, p. 10-13 | V |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 41 | Copper (Granite Mtn) | 55°32'N, 132°41'W | P(?) | Vein | Au | Qz fissure veins in a granitic pluton carry free Au and sulfides | | V |
| 42 | Bendigo | 55°32'N, 132°41'W | P(?) | Vein | Au | Qz fissure veins in a granitic pluton carry free Au and sulfides | | V |
| 43 | Salmon Lake | 55°34'N, 132°38'W | O | Dissem; vein | Cu,Pb,W | Qz diorite and bordering schist contain disseminated sulfides and qz veins carrying sulfides and a few grains of sc. Sulfides are mainly py and po; a little cp and gn. No development | | V, DS S(?) |
| 44 | -- | 55°36'N, 132°38'W | C | Lode | Cu | Fourteen lode claims near Paul Young Creek | | -- |
| 45 | -- | 55°36'N, 132°35'W | C | Lode | Cu | -- | | -- |
| 46 | Paul Young Creek | 55°37'N, 132°36'W | P | Dissem; vein | Cu | Py and cp in qz, calc, or solid sulfide veins and as disseminations in faulted and jointed argillite. Little exploration | | V, MS(?) |
| 46 | Venus | 55°37'N, 132°36'W | P | Vein | Ag,Au,Cu, Zn | Po-cp-py-sl vein with qz-calc gangue in a shear zone in greenstone carries a little Au and as much as one oz Ag per ton. Explored in early 1900's by 800 ft of trenches and one or two adits. No known production | Warner and others, 1961, p. 5, 37, 42-43, 117-118 | V, MS(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 46 | Young | 55°37'N, 132°36'W | P | Vein; dissem(?) | Cu | Calc veins and adjacent black slate country rock in a shear zone next to a porphyry dike carry cp and py. Minor stripping | | V, MS(?) |
| 47 | Rush & Brown | 55°37'N, 132°35'W | M | Vein; massive | Ag,Au,Co, Cu,Fe,Ni | Two deposits were mined in early 1900's. One is mainly mag with small amounts of py and cp, the other is a sulfide vein. Mag body formed by replacement of greenstone and calcareous rocks by mag and tactice; a block about 160 ft long, 40-50 ft thick and 100 ft deep mined out; hand-sorted ore contained 3.25% Cu, 0.06 oz Au, and 0.25 oz Ag per ton. Vein deposit is in shear zone as much as 14 ft wide in greenstone and consists of lenses and networks of veinlets of cp, minor py and po; mined out above 200 ft level; considerable sulfide-rich rock probably remains below 500 ft level. Hand sorted ore contained 10.5% Cu, 0.26 oz Au per ton, and 1.6 oz Ag per ton. Developed by a glory hole, shafts, a series of levels as deep as 500 ft, and stopes. No reliable data on production from either deposit. | Warner and others, 1961, p. 32, 37, 42-43, 48, 112-116 | S |
| 48 | North Pole Hill | 55°38'N, 132°36'W | P | Vein; dissem(?) | Au,Cu | Bn in pyroxenite or gabbro of the pluton that is host to Salt Chuck ore body. Also pyritiferous qz veins carrying about 0.2 oz Au per ton. Surface excavations only | | MOS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 49 | Alexander | 55°37'N, 132°02'W | P | Vein | Au(?) | 45-ft tunnel on qz vein 6 in. to 3 ft thick. No data on mineralogy or Au content, if any | | V |
| 50 | Leibrant | 55°38'N, 132°34'W | M(?) | Dissem | Cu | Bn and cp disseminated in qz in a vertical fault in altered gabbro country rock. Developed in early 1900's by adit and winze | | MOS |
| 50 | Salt Chuck | 55°38'N, 132°34'W | M | Vein; dissem | Ag, Au, Cu, Pd, Pt | Pipe-like, possibly supergene-enriched, disseminated sulfide deposit in Upper Mesozoic gabbro-pyroxenite stock that intrudes Silurian graywacke. Ore bodies were irregular, randomly distributed veinlets mainly of bn, minor cp, secondary cc, cv, native Cu, and some mag; contained recoverable Cu, Au, Ag, and Pd and a little Pt. Ore minerals deposited in cracks and along fractures. Mine operated intermittently from 1905 to 1941, total production was 326,000 tons of ore; average metal content was 0.95% Cu, 0.036 oz Au per ton, 0.17 oz Ag, and 0.063 oz Pd per ton. Average Pt and Pd contents of 6 grab samples of sulfide-bearing rock collectd by USGS in 1972 were 0.057 ppm and 1.010 ppm respectively. Mine developed by 3 levels and a glory hole | Mertie, 1921a, p. 121-127; Gault, 1945; Holt and others, 1948b; Noel, 1966, p. 53-54, 62 | MOS |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 51 | Stevens | 55°37'N, 132°33'W | P | Vein | Cu | Stringers and small masses of bn in fractures in diorite. Some of the fractures also are intruded by aplite | | MOS |
| 52 | -- | 55°38'N, 132°30'W | C | Lode | Cu | -- | | -- |
| 53 | Copper Center | 55°37'N, 132°30'W | P | Vein; Massive(?) | Ag,Au,Cu, Fe | Greenstone country rock contains small, irregular pods and veins of mag, py, and cp; gangue is qz, calc, gr, and ep. Largest sulfide body is a dominantly cp vein 1-3 ft wide exposed for a length of 20 ft. Little Au and Ag. Minor exploration in early 1900's. No record of production | Warner and others, 1961, p. 42-43, 120-122 | S |
| 54 | Haida | 55°36'N, 132°30'W | M | Vein | Ag, Au, Cu, Fe, Mo | Deposit is small, irregular mass of mag carrying cp in gr-ep gangue; a little mo, Au, and Ag. Country rocks are greenstone with lenses of calcareous material. Workings consisted of about 200 ft of underground workings and a small glory hole. A little ore shipped in 1907 | Wright and Wright, 1908, p. 119-120; Warner and others, 1961, p. 119-120 | S |
| 55 | Charles | 55°36'N, 132°29'W | P | Massive | Ag,Au,Cu | Masses of cp, py with some mag in tactite in greenstone tuff or graywacke and conglomerate. High values in Ag and Au reported. Small open pit in tactite. No record of production | Wright, 1915, p. 78, 100; Warner and others, 1961, p. 5 | S |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 56 | Blackbird | 55°32'N, 132°36'W | P(?) | -- | Cu(?) | Probably staked as a Cu-prospect, but no data available | | -- |
| 57 | Kansas | 55°32'N, 132°36'W | P(?) | -- | Cu(?) | Probably staked as a Cu-prospect, but no data available | | -- |
| 58 | Brown and Metzdorf | 55°25'N, 132°29'W | M | Massive; dissem | Ag, Au, Cu, Mo | Tactite in calcareous sedimentary rocks contains gr, ep, cp, py, and a little mo in a 10-ft wide zone along footwall of a basic dike that also carries sulfides. Pre-WW II assays of 3 sulfide-rich samples averaged 0.027 oz Au and 0.59 oz Ag per ton, 3.8% Cu, and 0.05% $MoS_2$. Developed by 225 ft adit, 2 shafts, and surface excavations; in 1937 a 30-ton shipment of ore returned $40 a ton | Wright and Wright, 1908, p. 120-121; Wright, 1915, p. 73; Warner and others, 1961, p. 125-126 | S |
| 59 | Alarm | 55°35'N, 132°28'W | M(?) | Dissem(?); massive(?) | Cu | Minor cp, mag, and py in tactite in marble within a few hundred feet of diorite; development consisted of about 200 ft of adits, open cuts, and 3 small stopes. Production (if any) was small | Wright and Wright, 1908, p. 118-119; Warner and others, 1961, p. 125 | S |

## CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 59 | It | 55°35'N, 132°28'W | M | Massive(?) | Ag,Au,Cu, Pb | Mainly cp and py, and minor mo, mag, and hem in tactite adjoining marble lenses. Country rock is mainly interlayered marble, greenstone, and irregular zones of tactite, and irregular dikes of diorite, gabbro, and finer grained mafic rocks. About $1,000,000 worth of ore averaging 3.99% Cu, and 0.685 oz Au and 0.478 oz Ag per ton was mined during 1912-1918 from glory holes and extensive underground workings. Two small mag bodies, one containing small pods of sulfides, were not mined. | Wright, 1915, p. 94-95; Warner and others, 1961, p. 5, 32, 122-125 | S |
| 59 | Reed | 55°35'N, 132°28'W | P | Massive(?) | Cu | Similar to It deposit; explored in 1908 | | S |
| 60 | -- | 55°37'N, 132°25'W | C | Lode | Au | -- | | -- |
| 61 | Big Five | 55°39'N, 132°25'W | P | Vein; massive(?) | Cu,Fe | Po, mag, and cp occur as small pods and stringers in tactite that replaces limestone near a diorite dike. Explored in early 1900's by a 40-ft adit and a 15-ft winze. No recorded production | Warner and others, 1961, p.110-111 | S |
| 62 | Palmer Cove | 55°38'N, 132°22'W | M | Vein | Au,Cu | Vein 3 ft wide. Small shipments of handpicked Cu ore around 1900 with good Au values reported | | S(?) |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 63 | Iron Cap | 55°39'N, 132°24'W | P | Massive | Ag,Au,Cu, Fe | Cu-Fe skarn deposits in greenstone, metamorphosed clastic sediments, and limestone cut by many granitic and mafic dikes, all intruded by a granitic stock. Deposits consist mainly of lenses of mag, cp, and subordinate py, and po; gangue is mainly gr-ep rock. A little bn, traces of Au, and as much as 0.6 oz Ag per ton. Resources estimated to be 100,000 long tons of inferred ore containing no more than 40% Fe, and 0.25% Cu | Warner and others, 1961, p. 31-32, 37, 43, 106-112 | S |
| 64 | Tolstoi | 55°38'N, 132°22'W | P(?) | Massive | Cu,Fe | Low grade mag-cp masses similar to those at Iron Cap. Little exploration | | S |
| 64 | Wallace | 55°38'N, 132°22'W | P(?) | Massive | Cu,Fe | Small masses of cp in vein of gr-ep rock. Little exploration | | S |
| 65 | Iron King No. 1 | 55°33'N, 132°25'W | P | Vein; dissem; massive(?) | Ag,Au,Cu, Fe | Mag-cp-py skarn and probably fissure vein deposit in greenstone and associated rocks cut by syenite, andesite, and basalt dikes. Mag occurs in greenstone and consists of small masses and as disseminated grains; cp and py are in fractures in mag and in greenstone. Deposit exposed by trenches and stripped surfaces. 29 channel samples by USBM indicated average of about 2% Cu, and minor Au and Ag in a body about 150 ft long and 10-15 ft wide; no data on depth | Warner and others, 1961, p. 102-106 | S, V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 65 | Copper King | 55°34'N, 132°26'W | P | Dissem; massive | Au,Cu,Fe | Py, mag, and cp disseminated in "bunches" with calc, ep, and qz gangue. Assays showed about 0.39 to about 0.48 oz Au per ton and up to 12-13% Cu. Developed by a 30 ft tunnel, 20 ft shaft, and a 35 ft open cut | | S |
| 65 | Morning Star | 55°34'N, 132°26'W | P | Massive | Au(?),Cu, Fe | Mass of mag with cp and py exposed at surface; appears to be 30-40 ft wide. Said to carry Au values. Explored by shaft 20 ft deep | | S |
| 65 | Poorman | 55°34'N, 132°26'W | P | Dissem; massive | Ag,Au,Cu, Fe | Deposit is a mass of magnetite that replaced and cemented greenstone breccia in a fault zone. Lode is 1,500 ft long, an average of 85 ft wide at the surface, and probably about 200 ft deep. Resource estimates are 0.9 million tons of measured ore, and 0.45 million tons of inferred ore. Ore averages 52.4% Fe, 0.25% Cu, 0.032 oz Au and 0.071 oz Ag per ton. Explored in early 1900's by 4 shafts, 3 adits, many trenches, 13 diamond-drill holes, and a magnetic survey. No production | Warner and others, 1961, p. 31-32, 45, 50-51, 96-102 | S |
| 66 | Copper Queen | 55°32'N, 132°23'W | P | Massive | Cu | Deposit is an irregular mass of cp, py, and mag in gr-ep gangue at contact of altered syenite intrusive body and greenstone tuff. Surface excavations and about 500 ft of tunneling. No production | Warner and others, 1961, p. 5 | S |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 67 | Uncle Sam | 55°32'N, 132°23'W | M | Massive | Au(?),Cu | Irregular masses of cp-py ore in gangue of gr, ep, mag, and calc. Country rock is altered greenstone tuff, intruded by syenite body and by felsic and mafic dikes. Developed by open pits and about 800 ft of tunnels and drifts. At least 350 tons of ore shipped in early 1900's returned $22 per ton. Low Au values reported | | S |
| 68 | Elm City | 55°32'N, 132°22'W | P | Vein(?); dissem(?) | Au,Cu | Cp and py in a zone about 3 ft wide in dioritic country rock partly replaced by ep; bounded by faults. Ore said to carry about 0.48 oz Au per ton. Short tunnel | | S, V |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 69 | Rich Hill | 55°32'N, 132°21'W | M | Massive; dissem; vein | Cu,Fe,Mo | Cu-Fe skarn deposit containing cp, py, mag, and a little mo. Greenstone and metasedimentary country rocks are cut by many dikes. Mag occurs as masses and disseminations in or near greenstone; sulfides occur in fractures in greenstone and mag. Lens of high grade cp mined out in 1917-18. Resources of lower grade material include a block about 100 ft long, 35 ft wide, and 80 ft deep containing 1.4-2.0% Cu, and other rock containing about 1% Cu. Small mag bodies contain as much as 50% Fe. Developed by many surface excavations, small glory hole, and about 800 ft of underground workings | Warner and others, 1961, p. 32, 50, 126-132 | S |
| 70 | Peacock | 55°31'N 132°30'W | P | Dissem(?) | Cu,Mo(?) | Gr-ep rock contains mag and a little cp and possibly mo. Two short tunnels driven in early 1900's | | S |
| 70 | Tacoma | 55°31'N, 132°20'W | P | Dissem | Cu,Mo(?) | Cp and possibly mo in gr-ep rock occurs as small, irregular patches and disseminations. Open cuts on exposures that are covered at high tide, and a 60-ft tunnel | | S |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 71, 72 | Hole in the wall | 55°32'N, 132°18'W | P | Massive(?) | Cu | Contact-metamorphosed limestone adjacent to a diorite intrusive body contains cp and subordinate mag. About 50 tons of surface material mined in early 1900's was left in a dump | | S |
| 73 | Mount Andrew | 55°31'N, 132°18'W | M | Massive; dissem | Ag, Au, Co, Cu, Fe | Cu-Fe skarn deposit consisting of massive mag, subordinate cp, and minor amounts of other sulfides. Deposit is cut by dikes. Mag-cp ore bodies as thick as 125 ft mined intermittently 1906-1917. See Mamie (no. 74) for production data. Average return of ore mined was 3.09% Cu and 0.0265 oz Au and 0.363 oz Ag per ton. Mine consisted of 4 glory holes, 3 adits, and other underground workings; aggregate length about 3,000 ft. Weighted average USBM analyses of samples from property showed 47.8% Fe, 0.32% Cu, and 0.011 oz Au and 0.55 oz Ag per long ton; also as much as 0.05% Co and small amounts of Ni, Zn, Cr, and V in some samples. Fe resource estimated at about 2,147,000 tons of material containing 50% Fe | Brooks, 1902, p. 102-103; Wright and Wright, 1908, p. 115-117; Wright and Tolonen, 1947; Warner and others, 1961, p. 31-32, 84-93 | S |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 74 | Mamie | 55°31'N, 132°17'W | M | Massive; dissem | Ag,Au,Cu, Fe | Cu-Fe skarn deposit consisting mainly of contorted tabular masses of mag, cp, and py, with calcite and calc-silicate gangue minerals. Country rocks are metamorphosed sedimentary rocks intercalated in greenstone. These rocks are intruded by dioritic and more alkalic granitic stocks, and by mafic dikes. Locally mag also replaces brecciated greenstone. Ore bodies were several masses of cp along the fringes of predominantly mag bodies. Production was more than $1,000,000 worth of Cu ore between 1905 and 1918. Remaining mineralized material is chiefly massive mag containing finely disseminated cp and py; material contains 53-59% Fe, 0.26-0.90% Cu, and 1.69-3.88% S. Combined production from Mamie, Mount Andrew, and Stevenson mines was at least 270,000 tons of Cu ore containing more than 12,817,000 lbs Cu, 6939 oz Au, and 55,930 oz Ag; no Fe produced. Fe resources of Mount Andrew-Mamie area estimated to be about 2,684,000 long tons; about 80% at Mount Andrew, most of rest at Mamie. All ore bodies within a few hundred ft of surface. Magnetic survey, diamond drilling, and other exploration indicates | Wright, 1915, p. 112-114; Warner and others, 1961, p. 32, 37, 54-84 | S |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| | | | | | | that there are no large undiscovered ore bodies in the area. Mamie mine consisted of 3 glory holes, 3 adits, and other interconnected underground workings | | |
| 74 | Stevenstown | 55°31'N, 132°17'W | M | Dissem; massive | Ag,Au,Cu, Fe | Cu-Fe skarn deposit consisting of massive cp and subordinate mag. Ore body was 8-25 ft thick over a horizontal area of about 60,000 sq ft. Considerable mass of barren dikes near center. Small unmined mag bodies are mixed with tactite and contain irregularly disseminated cp and py. Average metal content of ore mined 1916-18 was 2.88% Cu, and 0.0308 oz Au and 0.264 oz Ag per ton. Ore mined from 4 glory holes connected to a 550-ft tunnel. See Mamie (no. 74) for production data | Wright, 1915, p. 88-89; Wright and Tolonen, 1947, p. 5; Warner and others, 1961, p. 37, 93-96 | S |
| 75 | Big Six | 55°29'N, 132°12'W | D | Vein(?); dissem(?) | Cu | Cp, py, and native Cu in altered limestone along fault contact with greenstone | | V(?), DS(?) |
| 76 | Cachelot | 55°28'N, 132°08'W | D | Vein | Ag,Au,Cu | Qz vein 1-3 ft thick in sheared diorite carries cp in qz gangue. Random specimen contained 0.41 oz Ag and 0.14 oz Au per ton | | V |
| 77 | -- | 55°27'N, 132°10'W | C | Lode | Cu | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 78 | Shelton | 55°26'N, 132°38'W | P | Vein | Ag,Au,Cu | Py and cp make up no more than 1-2% of qz-calc vein in fractured limestone. Low Au and Ag values are reported. Sample across vein contained 0.25% Cu. Explored by a 40-ft drift and 55-ft winze in early 1900's | Twenhofel and others, 1949, p. 8-10 | V |
| 79,80 | Kina Cove | 55°29'- 55°31'N, 132°31'-132°32'W | D | Dissem; vein | Cu | Cp in recrystallized limestone and in a qz vein that borders a qz diorite pluton. Other small qz veins in schist carry py, po, and a little cp | | 79 DS<br>80 S, V, DS |
| 81,82 | Baker Point | 55°31'N, 132°25'W | P(?) | Massive(?) | Fe | Small pods and lenses of mag in banded chert and argillite in contact with an altered dike or flow. Nearby a prospect tunnel was driven at least 50 ft in volcanic graywacke | | S(?) |
| 81 | Sunny Day | 55°31'N, 132°25'W | P | Vein | Ag,Au,Cu | Vein adjacent to porphyry dike in metamorphosed greenstone carries cp and a little Au and Ag. Tunnel driven 135 ft to undercut lode, 1905 | | V |
| 83 | Hatchet | 55°26'N, 132°26'W | D | Vein; dissem | Au | Mineralized zone about 4 ft thick along a narrow fissure vein in carbonaceous, pyritic slate. Chief ore mineral is py; less than 0.048 oz Au per ton | | V, DS |
| 84 | -- | 55°24'N, 132°21'W | C | Lode | Cu | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 85 | -- | 55°22'N, 132°17'W | C | Lode | Fe | Twenty-two lode claims north of Clover Mtn. | | -- |
| 86 | Big Harbor | 55°22'N, 132°58'W | M | Massive(?) | Ag(?), Au(?), Cu,Zn(?) | Lenses of cp, py, and possibly sl at contact of greenschist and qz-mica schist probably contained some Au and Ag. Workings included shafts, several levels, a few stopes, and an adit. Total recorded production was 136 tons of ore shipped containing between 6 and 7% Cu, 1913-16 | Twenhofel and others, 1949, p. 15-17 | MS |
| 87 | -- | 55°21'N, 133°00'W | C | Lode | Au | -- | | -- |
| 88 | -- | 55°22'N, 132°52'W | O | -- | Cu | Py and minor cp in greenschist | | -- |
| 89 | -- | 55°22'N, 132°48'W | O | -- | Cu | Py and minor cp in greenschist | | -- |
| 90 | Nancy | 55°21'N, 132°48'W | P | Vein | Cu | Qz stringers in a silicified shear zone 25 ft wide in greenstone carry cp and py. Little development, shallow surface workings | | V |
| 91 | -- | 55°19'N, 132°47'W | O | Dissem(?) | Cu | Py and minor cp in calcareous greenstone | | DS(?) |
| 92 | Marble Heart | 55°20'N, 132°41'W | P | Vein | Pb | Small vein of gn in intensely deformed crystalline limestone. Explored about 1900 by a shallow shaft and short tunnel. No data on precious mineral content | | V |

## CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 93 | Twelvemile Creek | 55°18'N, 132°42'W | O | Dissem(?) | Cu | Py and cp in two limestone quarries | | DS(?) |
| 94 | -- | 55°16'N, 132°41'W | O | Float | Cu | Cp in boulders(?) in stream bed | | -- |
| 95 | -- | 55°19'N, 132°41'W | O | Vein | Cu | Cp in 1-in. thick qz vein in deformed lava | | -- |
| 96 | -- | 55°16'N, 132°40'W | O | Float | Cu | Cp veins in stream-bed float | | -- |
| 97 | Dolly Varden | 55°21'N, 132°42'W | P | Vein | Ag,Au,Cu | Discontinuous qz veins in marble interbedded with metamorphosed sedimentary and volcanic rocks contain td, much of which is altered to az and ml. Selected sample contained 0.06 oz Au and 8.64 oz per ton Ag. Staked in 1900, no production | Herreid and Rose, 1966, p. 29 | V |
| 97a | Mountain Bell | 55°20'N, 132°41'W | P(?) | Vein; dissem(?) | Au(?),Cu | 3 claims located on a narrow qz vein reported to carry good values in free Au | | V |
| 98 | Gould Island | 55°17'N, 132°32'W | P | Vein; dissem | Cu,Pb,Zn | Gn, sl, and cp in small veinlets and finely disseminated in a belt of siliceous limestone. Bedrock is limestone, siliceous schist, and slate intruded by granodiorite. Calc, qz, gr, ep and wl are gangue minerals. Amount of ore exposed is small and of low grade. Developments in 1908 included a 70-ft tunnel, opencuts, and a shallow shaft | | S |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 99 | Sultana | 55°17'N, 132°35'W | P | Dissem; Massive(?) | Co,Cu,Ni | Contact metamorphic deposit between granitic footwall and limestone hanging wall. Small masses and disseminated particles of Fe and Cu sulfides in gr-ep-calc gangue; some mag. Po sample contained between 0.1 and 0.2% Ni and a trace of Co. Explored in early 1900's by open cuts and tunnels. No record of production | | S |
| 100 | Beaver | 55°18'N, 132°35'W | 0 | Unknown | Au(?), Cu(?) | Au and Cu values reported about a mile from Hetta Inlet near Sulzer | | -- |
| 100 | -- | 55°18'N, 132°35'W | 0 | Unknown | Pb,Zn | Sl and gn occur in crystalline limestone on ridge 1.5 mi NE of Sulzer | | -- |
| 101 | Earl No. 1 | 55°16'N, 132°29'W | 0 | Dissem | Au(?) | Pyritic qz blebs in quartzitic schist. No mention of possible Au content | | DS |
| 101 | Rock Lake | Sec 4 T75S R85E | 0 | Massive | Ag,Au,Cu, Pb,Zn | Massive sulfide deposit similar to the one at Khayyam mine. "80-m-thick section of highly pyritic silicic and felsic schist is interbedded with fine-grain felsic, intermediate, and mafic schist." Up to 50% py. Some units contain up to 1% cp; all are magnetic. Geochemical analyses show traces to slightly anomalous Cu, Pb, Zn, and up to 0.6 ppm Au and 3.9 ppm Ag | Barrie, 1984, p. 134 | VM(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 102 | Bertha, Hecla, Red Rose | 55°17'N, 132°25'W | P(?) | Vein | Cu(?) | Three claims near Kiam (Khayyam) with cp and po reported from three parallel veins with an aggregate thickness of 50 ft | | V |
| 103 | Khayyam | 55°18'N, 132°23'W | M | Massive | Ag, Au, Cu, Zn | Massive sulfide deposit consisting of elongate, nearly vertical lenses of sulfide minerals that mainly conform to the schistosity of enclosing metamorphosed felsic, intermediate, and mafic volcanic rocks (Barrie, 1984). Ore bodies were mainly py with cp, po, sl, and mag; minor amounts of Au and Ag; some secondary Cu minerals; gangue was qz, calc, ep and chl. Developed by several hundred ft of underground workings, pits and trenches. The deposit was mined from 1901-1907 and produced about 250,000 metric tons of ore from which 7.0 million lb Cu, 1,290 oz Au, 1,711 oz Ag were recovered. Results of sampling after WW II by USBM (Fosse, 1946): 31 channel samples contained from 0 to 5.25% Cu, from trace to 0.20 oz Au per ton, and 0 to 8.1 oz Ag per ton. Indicated and inferred resources of 84,000 tons containing 1.71% Cu, 0.93% Zn, 0.06 oz Au per ton, and 0.30 oz Ag per ton. | Brooks, 1902, p. 94-95; Wright and Wright, 1908, p. 135-137; Fosse, 1946; Barrie, 1984 | VM |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 104 | Stumble On | 55°17'N 132°21'W | M(?) | Massive | Ag,Au,Cu, Zn | Elongate massive sulfide lenses parallel to foliation of intermediate and felsic schist country rock. Lenses consist of py, disseminated cp and a little po, sl, mag, Au, and Ag. USBM sampling indicated 0.46-12.70% Cu, 0.1-0.9 oz Au per ton, and a trace to 0.3 oz Ag per ton. Explored 1900-1945 by approximately 525 ft of underground workings, and surface excavations. No reliable records of production | Brooks, 1902, p. 95-96; Fosse, 1946, p. 3-4, 6-8 | VM |
| 105 | Fowlkes | 55°16N, 132°18'W | P | Dissem(?) | Cu | Cp in a 12-ft wide zone in gneiss or schist. Crosscut driven 95 ft to footwall, no work since about 1905 | | MS(?) |
| 106 | Anderson (McKenzie Inlet) | 55°20'N, 132°22'W | O | Vein(?) | Cu | Cp in a 3-ft thick zone in sheared chloritic schist; only development is a tunnel | | MS(?) |
| 107 | Anderson (Cholmondeley Sound) | 55°16'N, 132°14'W | O | Vein(?) | Cu(?) | Cu values reported in a vein near West Arm of Cholmondeley Sound | | MS(?) |
| 108 | -- | 55°15'N, 132°14'W | C | Lode | Cu | -- | | -- |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 109 | Houghton | 55°15'N, 132°38'W | P | Massive | Cu,Fe | Cu-Fe skarn deposit consisting of massive cp with mag, py, po, and a little native Cu in a 5-ft thick body along contact between granodiorite and limestone. Explored in 1906-07 by surface excavations and two tunnels. No record of production | | S |
| 110 | Corbin | 55°14'N, 132°39'W | M | Massive | Ag,Au,Cu | Fissure vein no more than 3 ft wide in greenstone; consists mainly of py, subordinate cp, and minor qz and calc. Some ore shipped in 1905 to smelter at Coppermount contained about $3 per ton in Au and Ag. Developed by 100-ft shaft, some drifts, and a 210 ft tunnel | | MS(?) |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 111 | Jumbo (Hetta Inlet) | 55°15'N, 132°37'W | M | Massive | Ag,Au,Cu, Mo,Fe,Zn | This contact metamorphic deposit is maialy in pre-Ordovician marble at contacts with a Cretaceous(?) granodiorite stock and in marble inclusions in the stock. Two groups of deposits (1) cp group, and (2) mag-cp group. Minerals reported from cp bodies include cp, spec, sl, and mo; predominant contact minerals associated with mag-cp bodies are dp and gr. The richer cp bodies were mined out between 1907 and 1923. Total production was about 10 million lbs Cu, 280,000 oz Ag, and 7,000 oz Au from about 125,000 tons of ore. Development included more than 2 mi of workings. Resources remaining in mag-cp bodies are reported to be about 650,000 tons averaging 45.2% Fe, 0.75% Cu, 0.1 oz Au per ton, and 0.08 oz Ag per ton (Bundtzen and others, 1984, p. 43) | Wright and Wright, 1908, p. 99-102; Wright and Fosse, 1946; Kennedy, 1953 | S |
| 112 | Copper Mountain | 55°14'N, 132°37'W | M | Massive | Ag,Au,Cu | Ore mined 1902-1906 was primarily irregular masses of secondary Cu carbonate derived from lower grade contact metamorphic cp deposit between diorite and limestone. Ore is cp and bn and Cu carbonates. Ore mined ran $1-$2 per ton in Au and Ag. Several thousand ft of workings; no reliable production figures | Brooks, 1902, p. 105-107; Wright and Wright, 1908, p. 96-98 | S |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 112 | Miller Bros. | 55°14'N, 132°37'W | P(?) | Massive(?) | Au(?), Cu(?) | Large body of low grade Cu and Au ore reported | | MS(?) |
| 113 | Gould (Hetta Inlet) | 55°13'N, 132°36'W | P | Massive(?); dissem(?) | Cu | Contact metamorphic deposit at contact between granodiorite and "quartzite" consists of small amounts of cp and po in gr-ep gaugue. Minor development in early 1900's; no early record of production | | S |
| 113 | Iron Crown (Hetta Inlet) | 55°13'N, 132°36'W | O | Unknown; possibly massive | Co,Ni | Po sample contained 0.1-0.2% Ni and a trace of Co | | MS(?) |
| 113 | Paris | 55°13'N, 132°36'W | P | Vein | Au,Cu | Qz vein 1 ft wide in "quartzite" contains low values in Cu and Au; 115-ft tunnel driven on vein | | V |
| 114 | Hetta Mountain | 55°12'N, 132°32'W | P | Massive | Cu | Cp and po occur as small masses in gr-ep rock between granodiorite body and limestone and "quartzite"; secondary Cu minerals at surface. Several prospects developed by short tunnels, open cuts, and surface stripping. No record of production | | S, MS(?) |
| 115 a-b | Lake Marge (b) | 55°12'N,132°31'W 55°13'N,132°32'W | C | Lode | Au | 52 lode claims in Hetta Lake/ Hetta Mtn. area | | S (1158) |
| 116 | Russian Bear | 55°13'N, 132°34'W | P | Massive | Cu | Small contact-metamorphic Cu deposit. Small masses of ore exposed by opencuts and trenches | | S |

## CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 116 | Texas | 55°13'N, 132°23'W | P | Massive | Cu | Small contact-metamorphic Cu deposit | | S |
| 117 | Summit Lake | 55°13'N, 132°33'W | D | Dissem | Mo | Mo minerals in skarn near diorite | | S |
| 117a | Rex | 55°15'N, 132°32'W | P | Massive(?) | Cu,Fe | Cp and mag in gr-ep-dp gangue in contact zone between qz diorite and limestone on Green Monster Mountain. Development consists of open cuts and short adits. | | S |
| 118 | Green Monster | 55°15'N, 132°32'W | P | Massive; Vein | Au,Cu,Fe Mo,Pb | Sulfide-bearing contact metamorphic deposits consisting of small masses of magnetite and sulfides (cp, py, po, mo) along contact between lower Paleozoic limestone and minor greenschist and a Cretaceous(?) qz diorite stock; some surface oxidation; gangue includes ep, dp, gr, act, tr, chl, calc, qz, sp, and ph. Brooks (1902) reported $8-$10 in Au per ton. Large, exceptionally fine ep crystals have been collected from this deposit, which was developed in early 1900's by 2 65-ft tunnels. One deposit about 1,000 ft from main granite mass is a narrow gn-py-cp vein along the contact between a porphry dike and limestone. | Wright and Wright, 1908, p. 102-103 | S |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 119 | Bruce | 55°14'N, 132°37'W | P | Unknown | Cu(?) | Cu(?) prospect at Copper Mtn.; some work was done in 1914 | | -- |
| 120 | Friendship | 55°13'N, 132°20'W | P | Vein(?) | Au,Cu | Irregularly distributed bunches of cp and bn in a gangue of qz and calc along fault contact between schistose greenstone and marble. Samples reported to contain as much as 26% Cu and about 0.05 oz Au per ton. Little development | | V, MS(?) |
| 120 | Research | 55°13'N, 132°20'W | P(?) | Massive(?) | Pb,Zn | Pb-Zn claim. No other data on deposit | | V(?); MS(?) |
| 120a | Dora Bay | 55°10'N, 132°15'W | O | Vein; dissem | REE | Eudialyte-bearing nepheline syenite and associated pegmatites between Dora Bay and south arm of Cholmondeley Sound. | Eberlein and others, 1983, p. 21 | MUR |
| 121 | Moonshine (Cholmondeley Sound) | 55°11'N, 132°23'W | M | Vein; Massive(?) | Ag,Cu,Pb, Zn | Deposit consists of a vein that varies from a gouge seam in schist to a body several ft wide in limestone; and a "replacement" deposit in limestone and schist. Ore mineral is mainly massive gn in qz-carbonate gangue; some py, cp and sl; high Ag values reported. A little ore mined in early 1900's; workings included tunnels, a shaft, and a raise | | V, VM |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 122 | Ketchikan Copper Co. | 55°12'N, 132°21'W | P | Vein; dissem | Ag,Au,Cu | Schist contains veins and disseminated grains of py, cp, and gn(?). Reported (1902) combined metal values range from $2.50 to $25 and average $4-$5 per ton. 300 ft tunnel | | V, MS(?) |
| 123 | Hope (Cholmondeley Sound) | 55°10'N, 132°32'W | P | Massive(?) | Ag,Pb,Zn | Sl, gn, ep, and qz have replaced marble and calcite lenses in schist; metallic minerals carry a small amount of Ag. Explored in early 1900's by shallow shaft and open cuts. | | S(?), MS(?) |
| 124 | Keete Inlet | 55°05'N, 132°29'W | P | Dissem; vein | Cu | Shear zone in siliceous beds in greenstone schist contains disseminated particles and lenses of cp and py; pieces of qz veins containing bn and cp on dump. Little development, no production reported | | V, MS(?) |
| 125 | Marion | 55°09'N, 132°29'W | P | Vein | Cu,Pb | Qz-calc vein along fault in graywacke schist contains small quantities of py, cp, and gn; no data on Ag or Au content, if any. Developed by 400 ft adit and a 50 ft winze. No record of production | Twenhofel and others, 1949, p. 19-21 | V |
| 126 | -- | 55°04'N, 132°38'W | C | Lode | ba | Lode claim near Lime Point | | SH(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 127 | Lime Point | 55°03'N, 132°38'W | M | Massive | ba | Massive ba deposit in limestone interbedded with talc schist. Deposit forms irregular mass about 100 ft long and 11-40 (average 21) ft wide. Barite is about 91% $BaSO_4$; only impurity is calc. Estimated to contain about 5,000 short tons of ba. Test shipments in early 1900's | Twenhofel and others, 1949, p. 17-19 | SM(?) |
| 128 | Teresa | 55°04'N 132°38'W | P(?) | Unknown | Cu(?) | Cu claim located in 1916 a mile north of Lime Point. No other data available | | -- |
| 129 | Florence | 55°04'N, 132°38'W | P(?) | Unknown | Cu(?) | Cu claim a mile north of Lime Point in 1916. No other data available | | -- |
| 130 | Copper City | 55°08'N, 132°37'W | M | Massive | Ag, Au, Cu, Zn | Massive sulfide body 6 in. to 4 ft thick parallel to bedding in country rocks that vary from black slate to amphibolite schist. Post-ore diabase dikes. Ore is cp, py, sl, in a gangue of hem, qz, calc, and ep; secondary Cu and Fe minerals in places. Ore mined 1904-1910 from shaft 300 ft deep and several levels averaged $3-$6 Au per ton, $1-$3 Ag per ton, and 6-9% Zn. Remaining resources are reported to contain up to 12.7% Cu, 2.7% Zn, 2.5 oz Ag per ton, and 0.2 oz Au per ton (Bundtzen and others, 1984, p. 43) | Wright and Wright, 1908, p. 106-107 | MS |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 131 | Lucky Boy | 55°09'N, 132°14'W | P | Vein | Ag,Au,Cu, Pb,Zn | Qz-calc breccia veins 3-8 ft thick that transect foliation of schist and minor limestone contain sl, gn, cp, py, and small amounts Au and Ag. Resources of two best exposed veins are estimated to be about 8,500 tons of material containing as much as 5.23% Zn, 2.05% Pb, and smaller amounts of Cu, Au, and Ag. Several hundred feet of workings in early 1900's; no known production | Robinson and Twenhofel, 1953, p. 73-78 | V, MS(?) |
| 132 | -- | 55°09'N, 132°13'W | C | Lode | Ag,Au,Pb | -- | | -- |
| 133 | Croesus | 55°09'N, 132°11'W | M(?) | Vein | Au,Cu | Qz veins as much as 4 ft thick in greenstone schist and limestone contain a little Au and native Cu. Limestone contains hem, ep, and cp; mag in schist. Samples collected in 1932 assayed low in Au | | V, S(?), MS(?) |
| 134 | Cymru | 55°08'N, 132°12'W | M | Vein | Ag,Au,Cu | Four veins 1-5 ft side in Paleozoic marble consist of py and cp in qz and calc gangue. Minimum production (1906-1916) was 155,000 lbs Cu, 1,500 oz Ag and a little Au. Several hundred ft of underground workings | Wright and Wright, 1908, p. 132-134; Noel, 1966, p. 54, 62-63 | V, MS(?) |
| 135 | Hula Hula | 55°10'N, 132°09'W | O, P(?) | Vein | Au(?) | Vein of possibly auriferous qz staked in 1899 | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 136 | Kid | 55°10'N, 132°08'W | P | Vein | Au,Cu,Pb, Zn | Nearly vertical qz veins in schist intercalated with limestone contain py, cp, gn, sl, and traces of Au. Developed in early 1900's by opencuts and 30 ft tunnel | | V, MS(?) |
| 136 | Oregon (Kitkun Bay) | 55°10'N, 132°09'W | P(?) | Vein | Ag,Au,Cu, Zn | Qz vein crosscuts chloritic schist and contains py, cp, sl, and small amounts of Au and Ag | | V |
| 136 | Washington | 55°10'N, 132°09'W | O | Vein | Ag(?),Au, Cu(?), Zn(?) | Band of brecciated limestone and schist 10 ft wide contains a network of qz veinlets with sulfides (probably cp, py, and sl) and Au (assay of $4.80 [about 0.23 oz] per ton reported in 1902) | | V |
| 137 | Alameda | 55°10'N, 132°08'W | P(?) | Vein | Au | Qz body four ft wide said to be low in Au values. Most of qz is barren, some Fe stain, some py | | V |
| 137 | Frisco (Kitkun Bay) | 55°09'N, 132°08'W | P | Vein | Au | Vein deposit 12 ft wide carrying py and fragments of limestone and schist country rock; similar vein deposit 30 ft wide nearby; both deposits contain low values of Au. Trenched | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 138 | Valparaiso | 55°09'N 132°05'-132°06'W | M | Vein | Ag,Au,Cu, Pb,Zn | Qz-calc breccia veins in fault zone in limestone carry Au, py, cp, td, gn, sl and (near surface) secondary Cu and Fe minerals. Some veins bounded by faults with gouge. Mined in early 1900's by several shafts and levels to a depth of at least 400 ft. Some ore mined in early 1900's ran $200-$250 per ton in Au (at $20.67/oz) and Ag. Samples of veins and dumps taken in 1934 ran $5.50 to $42.07 per ton in Au and Ag | Brooks, 1902, p. 82-84; Wright and Wright, 1908, p. 173-174 | V |
| 139 | Amazon | 55°09'N, 132°03'W | P | Vein | Au | Breccia vein in calcareous schist is 5-10 ft wide and parallel to bedding; Au value reported to be about one oz per ton. About 185 ft of underground workings in early 1900's; no record of production | | V |
| 139 | Golden Fleece | 55°09'N, 132°03'W | M | Vein | Ag,Au | Irregular qz fissure veins as much as 8 or more ft thick in silicified and dolomitized limestone along a prominent north-trending fault zone parallel to Dolomi Bay. Post-ore diabase dikes cut country rock and deposit. The ore minerals are in the veins and consist of py, td, and free Au. Several limestone caverns follow the lode. Considerable production in early 1900's. Two specimens of ore contained 2.36 oz Ag and 0.05 oz Au and 9.96 oz Ag and 4.17 oz Au per ton. At least 600 ft of tunnels and a 400-ft raise | Brooks, 1902, p. 81-82; Wright and Wright, 1908, p. 175-176; Herreid, 1967, p. 13-14 | V |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 139 | House | 55°09'N, 132°03'W | P(?) | Vein | Cu | Qz vein 1-2 ft thick in crystalline limestone contains py, cp, and td | | V |
| 139 | Jumbo (Dolomi) | 55°09'N, 132°03'W | P(?) | Vein | Ag,Au | Two-generation qz vein 2-3 ft thick in graphitic phyllite contains Au and td. Some work in early 1900's. No record of production | | V |
| 139 | Matilda | 55°09'N, 132°03'W | P(?) | Vein | Au(?) | Qz vein 3 ft wide in sheared mica schist contains py and is reported to carry Au | | V |
| 139 | Moonshine (Dolomi) | 55°09'N, 132°03'W | P | Vein | Au(?),Cu | Breccia zone in limestone and schist with qz veins containing disseminated cp, td, and py. A little Au may have been recovered | | V |
| 139 | Standby | 55°09'N, 132°03'W | D | Vein | Au | Qz stringers in silicified limestone carry py and free Au | | V |
| 139 | Triangle No. 2 | 55°09'N, 132°03'W | D | Vein(?) | Au | Qz and calc in crystalline limestone reported to carry as much as 1.94 oz Au per ton | | V |
| 139 | Welcome | 55°09'N, 132°03'W | P | Vein | Au(?) | Mineralized shear zone along contact between silicified limestone and schist contains py and possibly free Au | | V |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 140 | Salmon | 55°09'N, 132°03'W | P(?) | Vein | Au,Cu,Pb | Two different descriptions of this claim. Brooks (1902) describes a pinching qz vein in sheared crystalline limestone that carries free Au, py, and gn. Wright and Wright (1908) describe a breccia vein in greenstone schist that contains py and cp much oxidized at the surface; Au can be panned from surface material. Developed by open cuts and shallow pits | | V |
| 140a | Port Johnson | 55°06'N, 132°01'W | O | Vein; dissem | Au | Fe-st py-sericite-altered phyllite occurs along south shore of Port Johnson about 1 mi east-southeast of Moss Pt. Highest grade pyritic zone known is 12 ft thick and contains about 50% py. A chip sample of this zone assayed 0.01 oz Au per ton but no other determinable metals. | Herreid, 1967, p. 16 | VM(?) |
| 141 | Beauty | 55°09'N, 132°03'W | P | Vein | Ag,Au,Cu | Qz vein in crystalline limestone carries td, cp, py and secondary Cu minerals. Vein 12-18 in. wide (Brooks, 1902) or 4-6 ft wide (Wright and Wright, 1908). Explored by shafts 15-60 ft deep and a connecting drift. No record of production | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 141 | Fortune | 55°09'N, 132°03'W | M | Vein | Au,Cu | Qz veins in a shear zone in limestone and schist carry a little Au, cp, py, and td. A little development and small test shipments in early 1900's | | V |
| 141 | Wellfleet | 55°09'N 132°03'W | P | Vein | Au | Qz ledge 20-25 ft wide in graphitic schist contains gp and py and reported (ca. 1915) to carry about 0.15 oz Au per ton | | V |
| 142 | Alpha | 55°09'N, 132°02'W | P | Vein | Au,Cu | Qz vein as much as 5 ft wide cuts schistose and folded limestone. Vein carries py and cp and small values in Au. Developed by open cuts and a shaft 35 ft deep | | V |
| 143 | New Era | 55°09'N, 132°03'W | P | Vein | Au(?) | Py-bearing qz vein 30 ft wide is crossed by an adit. No data on possible Au content | | V |
| 144 | Cook | 55°09'N, 132°03'W | P(?) | Unknown | Au(?) | Claim near Valparaiso mine staked, presumably for Au, in about 1915 | | -- |
| 145 | Chicago Kid | 55°09'N, 132°03'W | P | Vein | Au(?) | Shallow opening made on a 5 ft vein of brecciated limestone cemented by quartz carrying py and td | | V |
| 146 | Home | 55°09'N, 132°03'W | P | Vein | Ag(?),Au(?) | Qz vein as much as 2 ft thick cuts sheared limestone and contains py and td | | V |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 147 | Park View | 55°12'N, 132°05'W | P | Dissem | Au(?),Cu | Mineralized zone 5 ft thick in schist contains qz and calc and disseminated cp and py; probably low average Au values | | V, MS(?) |
| 148 | O.K. | 55°12'N, 132°04'W | P(?) | Vein | Au(?),Cu, Pb,Zn | Qz vein 3-4 ft thick and exposed for a length of 100 ft follows contact between schist and limestone. Vein contains cp, py, sl and small amounts of gn; reported to carry Au | | V |
| 149 | Equator | 55°13'N, 132°04'W | P | Vein | Au,Cu | Qz vein 3 ft thick contains inclusions of limestone country rock, cp and py; low values (1902) in Au. Tunnel 50 ft long | | V |
| 149 | Gladstone | 55°13'N, 132°04'W | P | Vein | Ag,Au,Cu | Qz-calc-gp veins in limestone and at least one diabase dike contain py, cp, and a little Au and Ag. Some work in early 1900's | | V |
| 149 | Saco | 55°13'N, 132°04'W | P | Vein | Ag,Au,Cu | Vertical lenticular qz vein that ranges from 2 in. to 4 ft thick in talc schist. Vein contains scattered small masses of cp and py carrying small values in Au and Ag. 50 ft tunnel | | V |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 150 | Navaho | 55°07'N, 132°10'W | P | Vein | Au,Cu | Qz vein in silicified porphyritic diorite (Brooks, 1902) or chloritic schist (Wright and Wright, 1908) pinches and swells to a width of 2 ft. Vein contains free Au, py, and a little cp. Samples said to have assayed as much as 1.94 oz Au per ton. Tunel driven about 80 ft in about 1900 | | V |
| 151 | Wednesday | 55°08'N, 132°05'W | P | Vein | Au(?) | Calc vein in schist band in crystalline limestone. No other data on deposit | | V |
| 152 | Westlake | 55°06'N, 132°10'W | P | Vein | Au,Pb,Zn | Qz vein along and near contact between granite and schist contains Au, gn, sl, and py. Two generations of qz in some veins. Some exploration in early 1900's | | V, MS(?) |
| 153 | Black Point | 55°03'N, 132°06'W | P | Vein(?) | Au(?) | Shaft and short adit opened in early 1900's on mineral occurrence in fragmental volcanic country rock. No other data | | V(?) |
| 154 | Wakefield | 55°04'N, 132°11'W | P | Massive; dissem | Ag(?),Au(?), Cu | Lenticular mass of cp 10 ft wide in belt of mineralized schist that contains much py, qz, and cp, possibly accompanied by small amounts of Au and Ag. Shaft sunk 50 ft in early 1900's | | VM, S(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 155 | Niblack | 55°04'N, 132°09'W | M | Massive; dissem | Ag,Au,Cu, Pb,Zn | Deposit consists of disseminations and lenticular masses of cp and py, accompanied by smaller amounts of sl, gn, and hem or mag. The sulfides occur mainly in layers of qz-sericite rock derived from felsic volcanic, volcaniclastic or other volcanic-related rock. This rock, in turn, is intercalated with intermediate or mafic metavolcanic rocks and subordinate slate. Ore bodies averaged $1.50-$2.50 per ton in total Au and Ag. Minimum production, 1902-09, was at least 1,400,000 lbs Cu, 1,100 oz Au and 15,000 oz Ag. 300 ft shaft and about a mile of underground workings. Drilled in 1980's by private interests. | Herreid, 1964, p. 6-9 | VM |
| 155 | Westcott | 55°04'N, 132°09'W | P(?) | Massive(?); dissem(?) | Cu | Body of siliceous pyritic rock 120 ft wide contains a little cp | | VM |
| 156 | Edith M. | 55°04'N, 132°08'W | P | Vein(?); dissem | Au(?),Cu | Py- and cp-bearing zone about 1 ft wide is reported to carry Au values. Another zone about 8 ft wide contains only py. Country rock is greenschist; 20 ft tunnel | | VM |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 156 | Lookout | 55°04'N, 132°08'W | P | Vein; dissem; massive(?) | Ag,Au,Cu | Zones of qz-sericite schist containing qz veins and small masses of sulfides: cv, cp, py, and Au. Samples across a 15-ft wide zone contained as much as 5.2% Cu, 0.20 oz Au per ton, and 2.31 oz Ag per ton. Two tunnels with total length of 220 ft (1908) | | VM, V |
| 157 | Dana | 55°03'N, 132°07'W | P | Massive; vein | Au,Cu | Lenticular bodies of massive sulfides in a zone 125 ft wide in qz-sericite schist. Sulfides are mainly py, some cp. Au reported; films of native Cu along joint planes. From 1903-05 developed by 450 ft of tunnel, crosscuts, drifts, and a shaft 48 ft deep. No record of production. Drill in 1980's by private interests | | VM, V |
| 158 | Yellowstone | 55°05'N, 133°10'W | O | Vein | Au,Cu | Auriferous qz-calc-cp-po veins. A little work in early 1900's | | V |
| 159 | Moonshine (Dall Island) | 55°06'N, 133°07'W | P | Unknown | Ag(?),Pb(?) | Prospect on lode containing argentiferous gn. No other data. | | -- |
| 160 | Miller | 55°03'N, 133°06'W | P | Vein | Cu | Qz-calc veins exposed by open-cuts carry cp and po. Country rock is limestone and siliceous schist | | V |
| 160 | Shellhouse | 55°03'N, 133°07'W | P | Vein | Cu | Qz-calc veins in limestone and siliceous schist carry cp and po. Explored in early 1900's by open cuts and adit; no record of production | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 161 | -- | 55°03'N, 133°06'W | C | Lode | Au,Cu,Pb | -- | | -- |
| 162 | Silver Star | 55°01'N, 133°04'W | P | Vein | Ag,Au,Cu Pb,Zn | Two parallel veins in limestone contain sl, cp, ga, and unknown amounts of Au and Ag. Explored in early 1900's by adit and 2 drifts. No record of production | | V |
| 163 | Flat Island | 55°05'N, 132°42'W | M | Unknown | Au | A few thousand dollars worth of gold said to have been recovered ca. 1900 from prospect on beach | | -- |
| 164 | -- | 55°01'N, 132°45'W | C | Lode | Cu | -- | | -- |
| 165 | Gould (Sukkwan Island) | 55°00'N, 132°44'W | P | Dissem; vein | Cu | Schist, in places pyritic, locally in contact with granitic rock. Schist is veined with stringers of cp and po that follow and cut schistosity. A little surface exploration in 1917 | | V, MS(?), S(?) |
| 166 | -- | 55°47N, 132°11'W | C | Lode | Fe | -- | | MOS |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 167 | Union Bay | 55°44'- 55°49'N, 132°00'-132°12'W | D | Stratiform; dissem; vein | Cr,Fe,Pt, V | Magmatic segregations of Ti-rich mag and of chromite in a Cretaceous zoned ultramafic complex that intrudes gabbro and metasedimentary rocks. Complex consists of 3 mi X 5 mi concentrically zoned pipe and lopolith that grades from a core of dunite and peridotite to a border of hornblende clinopyroxenite. Mag is a primary constituent of the pyroxenite and occurs with chromite as disseminated crystals in dunite; cr also in discontinuous stringers in dunite. Anomalous amounts of Pt-group metals with mag and cr in dunite; assays of hand-picked chromite average 0.093 ppm Pt, 0.200 ppm Pd., 0.062 ppm Rh, and 0.215 ppm Ir. Deposit estimated to contain about a billion tons of material containing 18-20% Fe and significant amounts of V | Kennedy and Walton, 1946, p. 80-83; Ruckmick and Noble, 1956; Clark and Greenwood, 1972a, p. C159-160; 1972b, p. C21-27; Page and others, 1973, p. 540, 542-543 | MOS |
| 168 | -- | 55°46'N, 132°10'W | C | Lode | Fe | -- | | MOS |
| 169 | -- | 55°48'N, 132°04'W | C | Lode | Au | -- | | MOS |
| 170 | -- | 55°47'N, 132°05'W | C | Lode | Fe | 25 lode claims east of Mt. Burnett | | MOS |
| 171 | -- | 55°46'N, 132°04'W | C | Lode | Cr | -- | | MOS |
| 172 | -- | 55°45'N, 132°03'W | C | Lode | Fe | 47 lode claims southeast of Mt. Burnett | | MOS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 173 | -- | 55°41'N, 132°07'W | C | Lode | Au | Eight lode claims near Bear Lake | | -- |
| 174 | Gold Standard | 55°39'N, 132°00'W | M | Vein | Au,Bi,Pb | Two sets of qz veins in Upper(?) Mesozoic phyllitic flysch and andesitic or basaltic metatuff. The older set of veins is parallel to the foliation of the host rocks and has produced most of the ore. The younger veins are smaller, strike parallel to the foliation but dip in the opposite direction, and contain little gold. The principal productive vein is 6 in. to 6 ft thick and exposed for more than 1,000 ft along strike. In addition to Au, it contains py and small amounts of gn and tt (a bismuth mineral). The deposit was mined intermittently by extensive underground workings from 1898 to 1941. Most productive mine in Heim Bay area, but no public data on production or grade | Wright and Wright, 1908, p. 153-155 | V |
| 175 | Midnight Sun | 55°39'N, 132°01'W | P | Vein | Au | Sheared qz vein carries free Au in pyrite. Country rock is greenschist. 15-ft open cut excavated in early 1900's | | V |
| 176 | Puzzler | 55°39'N, 132°02'W | P | Vein(?); dissem(?) | Au(?) | Two systems of auriferous(?) qz veins in graphitic schist. Explored in early 1900's by tunnel and open cut. No data on tenor | | V, OS |

CRAIG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 177 | Helm Bay | 55°37'N, 132°00'W | M | Vein | Au | Numerous small Au-bearing qz stringers near contact between black slate and greenstone. A little ore mined in 1929 | | V |
| 177 | Helm Bay King | 55°40'N, 132°01'W | M | Vein; dissem | Au,Cu,Pb | Shear zone in greenstone containing qz gash veins and lenses that carry free Au (about 0.68 oz per ton) and rare cp and gn; pyrite cubes in wall rock. 45-ft deep shaft, crosscuts, and trenches; ore zone in bottom of shaft is 8 ft wide. Probably small production in 1923 | | V, DS |
| 178 | Hoffman | 55°38'N, 132°02'W | P | Vein | Au | Py and fine Au reported in irregular vein about 5 ft thick in greenstone. 21 ft tunnel in early 1900's | | V, DS |
| 179 | Blue Jay (Helm Bay) | 55°39'N, 132°00'W | M | Vein(?) | Au(?) | Auriferous(?) qz veins reportedly mined 1938-1940 | | V |
| 180 | Keystone | 55°37'N, 132°01'W | P | Vein | Ag,Au | Stockworks of stringers in intensely sheared chloritic schist; schist and stringers contain py and some Au and Ag; about 0.39 oz Au per ton. Approximately 700 ft of underground workings plus a 65 ft shaft in early 1900's. No record of production. | | V, DS |
| 181 | Melville | 55°37'N, 132°02'W | M | Vein | Au(?) | Qz vein in fault that cuts slate and greenstone carries aspy. A little Au(?) ore was mined in early 1900's from a short tunnel and by surface stripping | | V, DS |

DIXON ENTRANCE QUADRANGLE
(latitude 54°-55°N; longitude 132°-134°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | 3/BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1 | Forrester Point | 54°50'N, 133°32'W | O | Dissem; vein | Mo | Porphyry Mo deposit; Py- and mo-bearing qz-monzonite | | P |
| 2 | Wood Cove | 54°49'N, 133°31'W | O | Vein; dissem | Cu,Mo | Porphyry Cu-Mo deposit: Veinlets and disseminations in altered porphyritic qz monzonite and granodiorite and in contact metamorphosed conglomerate contain qz, mo, cp, py, and po | | P |
| 3 | Mount Vesta | 54°56'N, 132°57'W | P | Vein | Ag,Au,Cu, Pb,Zn | Td, cp, gn, and sl occur as veinlets and seams in limestone near contact with granite; said to carry appreciable Au and Ag. Explored by opencuts and an 80 ft tunnel in early 1900's. No recorded production | | V |
| 4 | Lucky Strike | 54°54'N, 132°56'W | P | Vein | Cu | Shear zone in schist contains cp, py, and much limonitic material; cut by qz stringers that carry bunches of cp. Little if any development | | V |

3/Geologic descriptions of deposits in the Dixon Entrance quadrangle are adapted mainly from summaries in one or more of the following general references: Berg and others (1981, p. 37-40); and Cobb (1972c and 1978c). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claim map for the quadrangle (U.S. Bureau of Mines, 1978c).

DIXON ENTRANCE QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 5 | Lakeside | 55°00'N, 132°45'W | P | Vein | Cu | Cp-bearing rock occurs in shear zones along contact between pyroxenite and greenstone; one shear zone is about 5 ft wide, the other 2 ft wide. Explored by a shaft 51 ft deep and a crosscut 41 ft long that penetrated the two shear zones. No record of any production | | V |
| 6 | -- | 55°55'N, 132°48'W | C | Placer | Au | -- | | Placer |
| 7 | -- | 54°50'N 132°42'W | C | Lode | Ag,Pb,Zn | Two claims on Long Island, 1942 | | -- |
| 8 | -- | 54°42'N, 132°44'W | C | Lode | Au | -- | | -- |
| 9 | -- | 54°42'N, 132°45'W | C | Lode | Au | -- | | -- |
| 10 | McLeod Bay | 54°41'- 54°42'N, 132°11'-132°14'W | P | Vein; dissem | Au,Cu,Pb | Many Au claims located on qz veins and stringers in shear zones in schist. Deposits contain cp, py, gn, and a little visible Au. Samples collected in 1940's contained up to 0.6 oz Au per ton. Developed by opencuts, adits, and probably drifts, but no production | | V, MS |
| 11 | -- | 54°57'N, 132°35'W | D | Lode | Au | -- | | -- |
| 12 | -- | 54°55'N, 133°18'W | C | Lode | Cu,Fe | Sixteen lode claims | | -- |

DIXON ENTRANCE QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 13 | - | 54°53'N, 133°20'W | C | Lode | Fe | -- | | -- |
| 14 | -- | 54°53'N, 133°19'W | C | Unknown | Ag,Au,Cu | Twenty-one lode claims near Hunter Bay, 1953 | | -- |
| 15 | -- | 54°52'N, 133°17'W | C | Lode | RA | -- | | -- |
| 16 | Goodhope | 54°52'N, 132°17'W | P(?) | Vein | Cu,Fe | Qz veins containing irregular bunches of mag, cp, and py in volcanic rocks cut by granitic dikes. Not enough work done to determine size or grade. Includes reference to Hunter Bay | | V |
| 17 | Ranger | 54°50'N, 132°19'W | P | Vein | Cu,Fe | Qz veins carry irregular bunches of mag, cp, and py. Veins cut altered volcanic rocks intruded by granitic dikes. Not enough work has been done to determine size or grade of deposit. Only development is an adit 10 ft long and some stripping to expose outcrops. Includes references to Tah Bay | | V |
| 18 | Moira Sound | 54°56'N, 132°13'W | O | Vein | Au | Auriferous calc veins in a fault zone cutting metamorphosed volcanic rocks. Veins carry py and minor Au. Opencut 8 ft long | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 19,20; 30-32; 37;42; 42a | Bokan Mountain | 54°54'- 54°57'N, 132°06'-132°11'W | M | Dissem; vein | Be,Nb,Pb, REE,Th,U | U-Th deposits and REE-bearing minerals occur mainly in or near a 3 $mi^2$ boss of Jurassic peralkaline granite (Bokan Mt. Granite). Most of the U-Th deposits that were mined are hydrothermal veins or replacement bodies in or near fractures; a few were concentrations of accessory minerals in the granite or in dikes; and one consisted of hydrothermal minerals in the interstices of metasedimentary country rocks (42a). Deposits contain uranothorite, uranoan thorianite, uraninite, rare earth minerals, niobates, and fluorite. Ross-Adams deposit (32) is an irregular steeply dipping pipe in peralkaline granite; central zone is richest, with surrounding transitional zone grading into normal peralkaline granite. Deposit discovered in 1955 and mined intermittently until about 1975. Production, all from the Ross-Adams mine, has been about 120,000 tons of ore averaging about %1 $U_3O_8$; about the same amount of Th in ore was not recovered | Denny, 1962; MacKevett, 1963; Matzko and Freeman, 1963, p. 44-99 | MUR |
| 21 | -- | 54°56'N, 132°11'W | C | Lode | RA | -- | | -- |
| 22,23 | -- | 54°55'N, 132°11'W | C | Lode | RA | -- | | -- |
| 24 | -- | 54°55'N, 132°12'W | C | Lode | RA | -- | | -- |

DIXON ENTRANCE QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 25 | -- | 54°55'N, 132°11'W | C | Lode | RA | -- | | -- |
| 26 | -- | 54°54'N, 132°11'W | C | Lode | RA | -- | | -- |
| 27 | -- | 54°55'N, 132°10'W | C | Lode | RA | -- | | - |
| 28 | -- | 54°55'N, 132°09'W | C | Lode | RA | -- | | -- |
| 29 | -- | 54°55'N, 132°09'W | C | Lode | RA | -- | | -- |
| 33 | -- | 54°54'N, 132°08'W | C | Lode | U | Sixty-five lode claims on Bokan Mountain, 1968 | | -- |
| 34 | -- | 54°54'N, 132°10'W | C | Lode | RA | -- | | -- |
| 35 | -- | 54°53'N, 132°09'W | C | Lode | Cu,RA,W | Five lode claims near Hessa Lake, 1955-56 | | -- |
| 36 | -- | 54°54'N, 132°07'W | C | Lode | U | Six lode claims in Bokan area, 1956 | | -- |
| 38 | -- | 54°54'N, 132°07'W | C | Lode | RA | -- | | -- |
| 39 | -- | 54°53'N, 132°06'W | C | Lode | RA | -- | | -- |
| 40 | -- | 54°53'N, 132°06'W | C | Lode | RA | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 41 | -- | 54°53'N, 132°05'W | C | Lode | RA | -- | | -- |
| 43 | -- | 54°50'N, 132°00'W | C | Lode | RA | -- | | -- |
| 44 | McLean Arm | 54°49'N, 132°01'W | P(?) | Dissem | Fe | Mag associated with hnbd-rich concentrations in diorite and qz diorite. Claim staked on magnetic anomaly in 1958 | MacKevett, 1963, p. 100-101 | MOS |
| 45 | -- | 54°48'N, 132°06'W | C | Lode | Cu,Mo | General location for many lode claims, 1966-77 | | -- |
| 46 | -- | 54°45'N, 132°05'W | C | Lode | Cu,Mo | -- | | -- |
| 47, 51 | Feickert | 54°42'- 54°45'N, 132°05'-132°09'W | P | Vein | Cu | Cp-bearing qz veins in andesitic greenstone at one prospect (47) and in granite and qz diorite at the other prospect (51). Surface stripping, a shaft, and open cuts | | V, SM (47) V (51) |
| 48 | -- | 54°45'N, 132°10'W | C | Lode | Au | -- | | -- |
| 49 | -- | 54°44'N, 132°13'W | C | Lode | RA | -- | | -- |
| 49a | -- | 54°44'N, 132°14'W | C | Lode | Au | -- | | -- |
| 49b | -- | 54°44'N, 132°13'W | C | Lode | Au | -- | | -- |

## DIXON ENTRANCE QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 50 | Alice | 54°43'N, 132°06'W | P | Vein | Cu | Cp occurs as irregular bunches and veinlets in limestone interbedded with andesitic greenstone. Two old shafts filled with water in 1916 | | V, MS |
| 51a | -- | 54°42'N, 132°03'W | C | Lode | Au | -- | | -- |
| 52a,b | -- | (a)54°46'N, 132°02'W (b)54°47'N, 132°01'W | C | Lode | Cu,Fe | Total of 34 lode claims, 1958-61, 1976-77 | | -- |
| 53 | -- | 54°45'N, 132°00'W | C | Lode | RA | -- | | -- |
| 54 | Stonerock Bay | 54°36"N, 132°00'W | P | Vein | RA,REE(?) | Radioactive minerals and mz(?) in qz-hem veins in altered andesite(?) dikes that cut syenite. A few shallow pits | MacKevett, 1963, p. 94 | VR |
| 55 | Mallard Bay | 54°46'N, 132°01'W | P(?) | Dissem(?) | Fe,RA | Up to about 10% mag in pyroxenite. Claim staked, 1958 | MacKevett, 1963, p. 61, 100-101 | MOS |
| 56, 57 | Polson and Ickis | 54°47'N, 132°01-132°03'W | P | Vein | Au,ba,Cu | Qz-calc-barite veins in steeply dipping faults in monzonite carry py, cp, bn, hem, Au, and secondary Fe and Cu minerals. Assays of veins in two adits showed 0.4-5.7% Cu and 0.02-0.58 oz Au per ton. About 520 ft of underground workings and several open cuts | MacKevett, 1963, p. 94-98 | V |
| 58 | Decker and West | 54°46'N, 132°01'W | P | Unknown | Cu(?) | Reported Cu prospect near Stonerock Bay | | -- |

DIXON ENTRANCE QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 59 | -- | 54°48'N, 132°00'W | C | Lode | Au,Cu,Pb | Ten lode claims | | -- |
| 60 | Spik | 54°47'N, 132°05'W | P | Massive | Cu | Bn, cp, and po occur as irregular masses in greenstone intruded by granite. Minor development in about 1915 | | MS(?) |
| 60a | -- | 54°47'N, 132°04'W | C | Lode | Au | -- | | -- |
| 61 | -- | 54°46'N, 132°06'W | C | Lode | RA | Total of 98 lode claims, 1966 | | -- |
| 62 | -- | 54°54'N, 132°13'W | C | Lode | RA | Total of 141 lode claims, 1960-77 | | -- |
| 63a-c | (a) S.W. Dall I.(Security Cove area)<br>(b) E cent. Long I. (Coning Inlet area)<br>(c) S. Prince of Wales I. (Bronson Bay area) | | D (a-c) | Massive (a-c) | Ag,Cu,Pb, Zn (a-c) | (a,b) "Significant stratabound(?) massive sulfide Cu-Pb-Zn-Ag prospects; grades of up to 1% Cu, 8% Zn, 4% Pb, and 2 oz Ag/ton reported; active claims"<br>(c) "Stratabound(?) massive sulfide Cu-Pb-Zn-Ag deposits; small tonnage; high-grade deposits with up to 20% Zn, 11% Pb, 1% Cu, and 4 oz Ag/ton" | Information about localities 63a-c is quoted from an unpublished 1978 report by Bear Creek Mining Company entitled "Significant mineral deposits and anomalies, southeast Alaska" | MS(?) |

## DIXON ENTRANCE QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 64-73 | Barrier I. area<br>Nichols Bay area | | O<br>O, P | Massive | Ag,Au,ba,<br>Cu,Pb,Zn | Stratabound massive and disseminated sulfide deposits in Ordovician or Silurian interbedded felsic and intermediate volcanic and volcaniclastic rocks (60-71; 73); and interstratified graywacke and slate (72). The sulfide minerals occur as grains disseminated throughout sequences of strata as much as 10 m thick; as rinds on pillows or pillow fragments; and as stratiform masses ranging from a few cm thick and few m long in flows and tuff, to a layer 3 m thick and at least several m long in graywacke interbedded with silicic tuff (72). Sulfide minerals consist chiefly of py, locally accompanied by small amounts of sl, gn, and aspy. AA and ss analyses of grab samples collected by USGS from the deposits show up to 10% Zn (72), 1500 ppm Pb (66), and 30 ppm Ag (66, 72). Au was detected in only one of the deposits (66), where 2 samples respectively contained 0.10 and 0.25 ppm Au | Gehrels and others, 1983 | VM<br>SM(72) |

JUNEAU QUADRANGLE
(latitude 58°-59°N; longitude 134°-136°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | [4/]BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1 | Nunatak on Casement Glacier | 58°58'N, 135°59'W | D | Vein | Zn | Qz-ankerite veins as much as 1 ft thick in 10-15 ft thick altered zone in thin-bedded hornfels. Selected sample of vein contained 300 ppm Zn | | V |
| 2 | Berg Mtn | 58°57'N, 135°42'W | D | Dissem(?) | (?) | Traces of yttrium in pyritic siliceous rock | | DS |
| 3 | Berg Creek | 58°58'N, 135°37'W | D | Unknown | Cr | Stream sediment samples in several square mile area contain 700-2,000 ppm Cr | | MOS(?) |
| 4 | -- | 58°58'N, 135°33'W | D | Dissem | Co,Cu | One sample of siliceous greenschist contained po, cp, and py(?). Co is a major trace constituent | | DS |
| 5 | East of Casement Glacier | 58°55'N, 135°58'W | D | Dissem | Cu | Py occurs in altered zones 5-30 ft thick in granitic rock near contact with hornfels. Composite and grab samples of altered rock contained up to 500 ppm Cu and 5 ppm Mo | | P(?) |
| 6 | -- | 58°56'N, 135°39'W | D | Float | Cu | Massive py- and cp- bearing boulder in glacial moraine | | -- |

[4/]Geologic descriptions of deposits in the Juneau quadrangle are adapted mainly from summaries in one or more of the following general references: Berg and others (1981, p. 41-58), and Cobb (1972d and 1978d)). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claim map for the quadrangle (U.S. Bureau of Mines, 1978d).

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 7a,b | Mt. Young | 58°54'- 58°55'N 135°37'-135°38'W | 0 | Dissem; vein | Ag,Au,Cu, Zn | Irregular, discontinuous pyritic Fe-stained zones in metamorphosed sedimentary and volcanic rocks. Grab samples of sulfide-bearing metavolcanic rocks and of altered slate and hornfels yielded up to 1,500 ppm Zn and were slightly anomalous in Ag, Cr, Cu, Mo, Pb, and V. A 15-ft chip sample across one of several pyritic Fe-stained zones in carbonaceous slate yielded 0.1 ppm Au and 20 ppm Ag, as well as basemetal values. A grab sample of float from a similar zone contained 0.1 ppm Au and 50 ppm Ag | | V, DS |
| 8 | Mt. Young | 58°53'N, 135°34'W | 0 | Dissem; vein | Ag,Cu, Zn(?) | Short qz veins less than 6 in. thick and altered zones a few ft thick in metamorphic and intrusive rocks. Samples from veins and altered zones contained traces of cp, probably a secondary Zn mineral, and anomalous amounts of Ag | | V, DS |
| 9 | Mt. Young | 58°52'N, 135°35'W | 0 | Dissem | Cu | Py and cp in cellular siliceous matrix associated with volcanic rocks | | DS |
| 10 | -- | 58°50'N, 135°40'W | 0 | Vein | Cu | Veinlets of bn, secondary copper minerals, and cp associated with siliceous volcanic rocks | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 11 | Adams Inlet | 58°52'N, 135°59'W | D | Dissem; vein | Cu | Py, cp, and po occur along fractures in amygdaloidal basalt flows near altered basalt dikes which intrude the flows. Py, il, and mag are disseminated throughout the dikes. A grab sample from a 4-ft wide altered zone contained 1 ppm Ag, 300 ppm Co, 500 ppm Cu and 30 ppm Mo. Chip samples ranged from 150 to 300 ppm Cu and 11 to 30 ppm Mo; one sample contained 10 ppm Sn | | V, DS |
| 12 | White Glacier | 58°49'N, 135°55'W | D | Dissem | Ag,Au,ba, Cu,Zn | Probably a stratabound volcanogenic deposit in Permian andesite and associated sedimentary rocks. The volcanic rocks contain small pods and disseminations of pyrite with slightly anomalous amounts of Pb, Zn, and Au. Iron-stained zone about 8 ft thick in limestone near contact with volcanic rocks and a mafic dike is mainly pyritic chert containing cp, sl, ba, wi, strontium minerals, and traces of native Ag and Au. Chip samples across zone contained as much as 4.5% Zn, 0.19% Cu, 7 ppm Ag, 5,000 ppm Ba, and 5,000 ppm Sr | | VM |
| 13 | -- | 58°51'N, 135°27'W | C | Unknown | Cu | -- | | -- |
| 13a | Endicott R. | 58°48'N, 135°30'W | D | Massive(?) | Cu,Zn | "Stratiform massive sulfide Cu-Zn deposit; active claims" | Information about this locality is quoted from a 1978 report by Bear Creek Mining Company entitled "Significant mineral dedeposits and anomalies, southeast Alaska" | MS(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 14 | -- | 58°53'N, 135°06'W | C | Lode | Au | -- | | -- |
| 15 | Ivanhoe | 58°53'N, 135°06'W | M | Vein | Au | Qz vein 1-9 ft (average 5 ft) thick in altered basaltic lava flows. In early 1900's, about 340 oz of Au was recovered from 3,000 tons of ore. Mine consisted of a drift and a stope | | V |
| 16 | Bear Creek | 58°52'N, 135°05'W | M | Vein | Au,Cu | Two py- and cp-bearing auriferous qz veins as much as 5 ft wide in diorite. About 5,500 tons of ore mined in late 1800's from about 1,100 ft of underground workings | | V |
| 16 | Horrible | 58°52'N, 135°05'W | M | Vein | Au | Py-bearing auriferous qz fissure vein in fine-grained diorite. About 73 fine oz of Au recovered in early 1900's from 500 tons of ore. Several hundred ft of underground workings | | V |
| 16 | Kensington | 58°52'N, 135°05'W | M | Vein | Au,Pb | Ore bodies are stockworks of qz veins in fracture zones in diorite. Principal sulfide is py; gn noted at one location. About 12,000 tons of ore mined in early 1900's from surface and underground workings. Several unsuccessful attempts to reopen after WW II | | V, P(?) |
| 16 | Ophir | 58°52'N, 135°05'W | P | Vein | Au(?) | Trace amounts of py in auriferous qz fissure vein 2-6 ft thick in diorite; many vugs and cavities lined with large qz crystals. Au values low. Several hundred feet of tunnels and drifts | | V |

## JUNEAU QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 16 | Seward | 58°52'N, 135°05'W | P | Vein | Au(?) | Qz veins reportedly carrying low Au values | | V |
| 17 | Johnson | 58°52'N, 135°04'W | P | Vein | Au | Stockwork of pyritic qz stringers in shattered country rock along contact between diorite and greenstone. Sampling around 1900 indicated an ore body 1,500 ft long, 50-70 ft wide, and with a minimum average value of about 0.189 oz Au per ton. Explored in early 1900's by 1,600 ft of drifts and cross-cuts | | V |
| 17 | Northern Bell | 58°52'N, 135°04'W | N | Vein | Au | Au- and sulfide-bearing qz fissure vein between diorite and chloritic schist. Nearly 23,000 tons of ore produced in late 1800's. No data on tenor | | V |
| 18 | Comet | 58°51'N, 135°04'W | N | Vein | Au,Cu,Pb | Py-, cp-, and gn-bearing auriferous qz fissure veins 2-8 ft thick in diorite near (but almost normal to) contact with slate and graywacke. In late 1800's about 22,250 fine oz of Au recovered from about 50,000 tons of ore. Over a mile of underground workings. Main vein stoped from level 600 ft below surface to surface | | V |
| 19 | Gold King, Little Johnson, Medicine Bird | 58°52'N, 135°03'W | P | Vein(?) | Au(?) | Group of claims above Jualin mine at head of Johnson Creek; possibly worked in late 1890's or early 1900's | | V |
| 20 | -- | 58°52'N, 135°00'W | C | Lode | Au | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 21 | -- | 58°52'N, 134°59'W | C | Placer | Au | -- | | Placer |
| 22 | -- | 58°51'N, 135°03'W | C | Lode | Au | -- | | -- |
| 23 | Greek Boy | 58°51'N, 135°00'W | P | Vein | Au(?) | Zone of nearly solid qz veins in qz diorite along sheared contact with altered basalt. Slate country rocks near deposit apparently contain disseminated sulfides. Only metallic mineral specifically mentioned is py. Several hundred ft of underground workings | | V, DS |
| 24 | Indiana | 58°50'N, 135°03'W | P | Vein | Au(?),Cu | Py and minor cp in qz stringers in diorite, which is sheared to greenschist. About 2800 ft of tunnels and drifts driven in 1897 | | V |
| 24 | Jualin | 58°50'N, 135°03'W | M | Vein | Au,Cu,Pb, Zn | Ore bodies were 4 or 5 qz fissure veins in diorite. One vein yielded about 1.5 oz Au per ton; in other veins, the ore averaged less than 0.5 oz of Au per ton. In addition to free Au, the ore bodies contained considerable py, cp, and gn and a little sl and secondary Cu minerals. Incomplete records indicate about 48,375 fine oz of Au produced in early 1900's. More than 18,000 ft of underground workings. Hydrothermally altered strata about 1,000 ft west of mine contain disseminated py | Knopf, 1911a, p. 44-47 | V, DS(?) P(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 25 | -- | 58°50'N, 135°03'W | C | Lode | Au | -- | | -- |
| 26 | Falls | 58°50'N, 135°02'W | P | Unknown | Au(?) | Group of claims near Jualin mine; some work in early 1900's | | -- |
| 26 | Fremming | 58°50'N, 135°02'W | P | Vein; dissem | Au,Cu,Pb, Zn | Approximately 6-ft wide zone of sulfide-bearing schist and qz-calc stringers contains py, cp, gn, sl, and free Au. Developed in early 1900's by 85 ft shaft, 360 ft crosscut, and a short connecting drift. No record of production | | V, DS |
| 27 | -- | 58°50'N, 135°01'W | C | Lode | Au | -- | | -- |
| 28 | Sandy Cove | 58°43'N, 135°58'W | M | Vein; dissem | Ag,Au,Cu, W | Qz veins 1-12 in. thick and altered zones as much as 10 ft thick in monzonite that intrudes and metamorphoses limestone. Veins contain py, cp, bn, sc, secondary Fe and Cu minerals, Au and Ag. Cp also occurs in altered zones in monzonite and in one contact metamorphic zone. Test shipments of 4 tons of selected material returned 0.37 oz Au and 0.15 oz Ag per ton; other samples contained as much as 0.96 oz Au and 2.4 oz Ag per ton. 110 ft tunnel | | V, P(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 29 | Miller Peak | 58°43'N, 135°56'W | P | Vein | Ag(?),Cu | Widely-spaced qz-calc veins that apparently are conformable with bedding in limestone or marble and can be traced for hundreds of feet along strike. One vein is in the footwall of an andesite dike. Veins contain py, cp, and mal. Channel samples contained 0.42-1.5% Cu and up to 0.7 ppm of Ag | | V, DS(?), S(?) |
| 30 | York Creek | 58°39'N, 135°55'W | P | Vein | Au,Co,Cu, Mo,Ni | Py-rich qz veins and altered zones containing pods of py occur in hornfels. Qz veins are up to 0.5 ft wide. Nearby Fe-stained zone in siliceous limestone contains an estimated 5-10% po. Samples of various altered zones in hornfels and limestone contain traces of Au, up to about 2,000 ppm Cu, and locally anomalous amounts of Co, Mo, and Ni. Four claims staked in the early 1900's | | V, DS(?), S(?) |
| 31 | -- | 58°46'N, 135°22'W | C | Lode | Ag,Au,Pb | -- | | -- |
| 32 | William Henry Bay | 58°46'N, 135°15'W | P | Vein | Cu,Pb,REE, Th,U,Zn(?) | Veinlets in a small Tertiary qz-monzonite pluton intrusive into Paleozoic volcanic and metasedimentary rocks contain py, cp, gn, sl(?), thorianite, and euxenite (a rare earth- and uranium-bearing mineral). Explored by several pits and a diamond drill hole. One sample was reported to contain 0.20% eU | Eakins, 1975, p. 12, 14-17 | MUR |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 32a | William Henry Bay | 58°42'N, 135°15'W | D | Dissem | Cu | Disseminated py, aspy, and cp in "cherty" rock on NW shore near head of bay | | DS |
| 33 | -- | 58°44'N, 135°14'W | C | Lode | RA | -- | | -- |
| 34 | -- | 58°43'N, 135°14'W | C | Lode | Cu | -- | | -- |
| 35 | Alaska Endicott | 58°42'N, 135°15'W | H | Vein | Ag,Au,Cu | Faulted qz-breccia vein about 10 ft thick in greenstone tuff and lava flows. Principal metallic mineral is cp accompanied by a little py and low values in Au and Ag. In early 1900's, 200 tons of ore was mined from which a total of 48.38 oz Au and 20 oz Ag was recovered. Shipment of Cu ore in 1923 reported; no data on amount or Cu content. About 2,400 ft of underground workings | Twenhofel and others, 1949, p. 28-30 | V |
| 36 | -- | 58°36'N, 135°15'W | C | Lode | Ag,Pb,Sn | -- | | -- |
| 37 | -- | 58°31'N, 135°01'W | C | Lode | Au | -- | | -- |
| 38 | -- | 58 28'N, 135°33'W | C | Lode | Cu | Diorite near peak 3051 contains approximately 2% po | | -- |
| 39 | -- | 58°27'N, 135°33'W | C | Lode | Cu | 36 claims staked on ground north of Exray prospect | | -- |
| 40 | -- | 58°27'N, 135°27'W | C | Lode | Ag | -- | | -- |

JUNEAU QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 41 | -- | 58°27'N, 135°27'W | C | Lode | Au | -- | | -- |
| 42 | Exray Copper Prospect | 58°26'N, 135°32'W | P | Vein | Ag,Au(?), Cu | Cp occurs in calc veins in calcareous argillite and in zones of limestone breccia. Trenched and staked as a Au, Ag, or Cu prospect at various times since the early 1900's. Samples collected in 1960's by USBM ranged from 80 ppm to 4,300 ppm Cu across widths of 1 to 6 ft; trace Ag was detected in one grab sample; Au not detected | | V, OS(?) |
| 43 | Howard Bay | 58°18'N, 135°04'W | P | Lode | Ag,Pb,Zn | Lode reportedly containing Ag, Pb, and Zn. Some development work since 1921. No other public data | | V(?) |
| 44 | -- | 58°08'N, 135°49'W | C | Lode | Fe | -- | | -- |
| 45 | -- | 58°02'N, 135°31'W | C | Lode | Fe | -- | | -- |
| 46 | -- | 58°45'N, 134°55'W | C | Lode | Au | -- | | -- |
| 47 | Tacoma | 58°43'N, 134°54'W | O(?) | Vein | Au(?) | Qz veins in black slate contain py. No mention of Au | | V |
| 48 | -- | 58°43'N, 134°54'W | C | Lode | Au,Fe | -- | | -- |
| 49 | Berners Bay | 58°44'N, 134°56'W | P | Unknown | Au(?) | Prospecting reported in 1905 | | V(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 50 | Echo Cove | 58°40'N, 134°53'W | P(?) | Unknown | Au(?) | Prospecting reported in 1940 | | V(?) |
| 51 | California | 58°40'N, 134°53'W | P | Dissem; Vein(?) | Au,Pb | 3-ft thick zone of qz, carbonate, aspy, gn, and Au(?) in schist and slate along contacts with greenstone. 160-ft tunnel in early 1900's | | V, DS |
| 51 | Gold Standard | 58°40'N, 134°53'W | P | Vein | Au,Pb | Stringer lode 2-6 ft thick in slate next to greenstone footwall contains aspy and sparse gn. Samples across a width of 4.5 ft contained about 0.3 fine oz Au per ton. 120-ft tunnel in early 1900's | | V, DS |
| 52 | Bessie | 58°36'N, 134°52'W | P | Vein | Au,Pb,Zn | Vertical ribbon(?) qz vein 1-5 ft thick cuts greenstone conglomerate, contains small amounts of py, aspy, sl, gn, and free Au. About 645 ft of underground workings in early 1900's. Test shipment of a few tons of ore; no other recorded production | | V |
| 52 | Aurora Borealis | 58°36'N, 134°52'W | M | Vein | Au,Pb | Qz vein as much as 3.5 ft thick in black slate country rock, near contact with greenstone and associated clastic rocks. Vein contains Au, aspy, py, and subordinate gn. Two 200 ft tunnels. Production in late 1800's was about 266 fine oz of Au | | V |
| 53 | Alaska-Washington | 58°35'N, 134°51'W | P | Vein | Au,Zn | Qz fissure vein in greenstone conglomerate contains auriferous py and a little sl. Several hundred ft of underground workings driven in early 1900's. No record of production | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 54 | Mother Lode | 58°34'N, 134°51'W | P | Vein; dissem | Au(?) | Qz masses in greenstone conglomerate were exposed by open cuts. Aspy and py in altered conglomerate wallrock. No data on Au | | V, DS |
| 55 | Blue Jay | 58°36'N, 134°49'W | P | Vein | Au | Qz stringer lode in slate carries about 0.33 oz Au per ton. 25-ft drift in 1907 | | V |
| 55 | Joyce-Jenson (-Johnson) | 58°36'N, 134°49'W | P | Vein | Au | Qz stringer lode in slate is 12 ft thick, and is said to contain as much as 0.34 fine oz Au per ton. Short tunnels driven before 1910. | | V |
| 55 | Maude(e) S. | 58°36'N, 134°49'W | P | Vein | Au | 4-5 ft thick qz stringer lode in slate carries about 0.33 oz Au per ton. 80-ft tunnel in 1907 | | V |
| 56 | Black Chief | 58°36'N, 134°48'W | P | Vein | Au(?),Pb | Qz stringers in crushed black slate in a zone 4-20 ft wide contain a little py, gn, and possibly Au. A few hundred feet of underground workings in early 1900's | | V |
| 56 | Cottrell-Spaulding | 58°36'N, 134°48'W | P | Vein | Au | Auriferous qz(?) vein averaging 2.5 ft thick reported to be exposed over a length of 1,500 ft. 160-ft crosscut (1907) | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 56 | E Pluribus Unum | 58°36'N, 134°48'W | P | Vein; dissem(?) | Au,Pb,Zn | Deposit consists of an 8-ft-thick qz stringer lode in graywacke and slate that is part of a disseminated(?) sulfide-bearing zone at least 35 ft wide. Principal workings (1909) were on a 20-in wide quartz vein containing aspy, gn, sl, and Au. Richest part of this vein carried 9.7-14.5 oz Au/ton for a length of 18 ft. 250-ft tunnel and 80 ft of raises | | V, DS(?) |
| 57 | Cascade | 58°35'N, 134°48'W | P | Vein | Au,Pb,Zn | Qz stringer lode in slate is 6 ft thick and contains aspy, gn, and sl. Slate also contains disseminated py. Footwall of stringer lode is augite-porphyritic basalt. Au content of stringer lode over width of 5 ft said to average about 0.58 oz per ton. 90 ft inclined shaft in early 1900's | | V, DS |
| 57 | Dividend | 58°35'N, 134°48'W | P | Vein | Au,Pb | Qz-calc stringer lode in black slate above a footwall of greenstone contains py, aspy, gn, and free Au across a thickness of 12 ft. About 1,300 ft of underground workings in early 1900's. No record of production | | V, DS |
| 57 | Julia | 58°35'N, 134°48'W | P | Vein | Au(?) | Qz stringer lode in slate. Probably contains sulfides and Au. Little development | | V, DS |
| 57 | Moonday | 58°35'N, 134°48'W | P | Vein | Au(?) | Qz stringer lode in slate is 6 ft wide. Probably contains sulfides and Au. Little development | | V, DS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 57 | Rex | 58°35'N, 134°48'W | M | Vein | Au | Aspy-bearing auriferous calc-qz vein reported to have yielded about 145 fine oz Au in 1903 | | V |
| 58 | Puzzler | 58°35'N, 134°47'W | P | Vein | Au(?) | Stringer lode of qz and slate 14 ft wide probably contains sulfides and Au. Slight development | | V |
| 59 | Eagle River | 58°34'N, 134°46'W | M | Vein | Au,Cu,Pb | Qz veins in shattered slate interbedded(?) with mafic and felsic igneous rocks. Sulfides include py, po, aspy, gn, and cp; native Cu also present; most of Au is free. Ore bodies 5-15 ft wide and 25-100 ft long were offset as much as several hundred feet by faults. Production from area in early 1900's was about 23,000 oz Au. More than 30,000 ft of underground workings | | V |
| 59a | Boulder Creek | 58°34'N, 134°47'W | P(?) | Dissem | Au(?) | Qz-sericite-py zone about 1,500 ft long and 100 ft wide | | DS |
| 60 | Oleson | 58°33'N, 134°46'W | O | Vein | Au(?) | Qz veins in slate along contact with volcanic rocks contain aspy crystals, commonly in rock fragments enclosed in qz. No data on Au content | | V, DS(?) |
| 61 | Mitchell and McPherson | 58°33'N, 134°43'W | P | Vein(?) | Au,Pb | Qz-, py-, and gn-bearing breccia zone 6 ft thick trends across banding of diorite gneiss; reported to carry 0.25-0.58 oz Au per ton | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 62a | St. Louis | 58°32'N, 134°41'W | P(?) | Vein(?) | Au,Pb | Aspy-, py-, and gn-bearing shear zone about 7 ft wide in qz-diorite gneiss. Reported to average about 0.25 oz Au per ton. No record of production | | V |
| 62b | Summit | 58°32'N, 134°41'W | P | Vein | Au | Qz vein 6-8 in. thick and 30 ft long cuts layering in qz-diorite gneiss. Vein carries considerable aspy, and visible free Au. 30 ft shaft in early 1900's. No production | | V |
| 63 | Holland Alaska | 58°32'N, 134°46'W | O | Unknown | Au(?) | Prospecting in early 1900's. No other data | | -- |
| 65 | Windfall Creek | 58°29'- 58°30'N, 134°40'-134°43'W | P | Vein | Au,Cu,Pb, Zn | Qz veins in schist contain aspy, gn, py,sl, a little cp, and some Au. Tunnel was driven 30 ft on one lode; no production. Placer Au discovered in 1882 and mined intermittently until 1906; no record of production | | V, DS(65) |
| 64 | do | do | M | Placer | Au | | | Placer (64) |
| 65 | Smith & Heid | 58°29'N, 134°40'W | P | Vein; dissem | Au | Qz vein and chl schist carry auriferous aspy. Country rock is mainly black, schistose graywacke locally containing disseminated py, aspy. 500 ft of tunnels in late 1800's. Amount of Au recovered was probably small | | V, DS |
| 66 | Montana Basin | 58°28'N, 134°39'W | P | Vein; dissem | Au,Cu,Pb, Zn | Silvery-white fine-grained qz-sericite schist contains qz stringers and locally disseminated or massive gn, sl, py, and minor aspy, cp. Stringer lodes and one or two qz veins up to 2 ft thick contain a little Au | | V, DS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 67 | Montana Creek | 58°28'N, 134°40'W | M | Placer | Au | Placer Au discovered in 1882; probably derived from qz veins in slate and/or schistose greenstone. Small-scale placer mining in early 1900's | | Placer |
| 68, 69 | McGinnis Creek | 58°27'N, 134°37'-134°38'W | M | Placer, vein | Au | Placer Au mined in early 1900's from talus cone in gulch; Au rough and mostly fine; probably derived from qz veins in slate upstream from placers | | V, Placer |
| 70 | Peterson | 58°26'N, 134°43'W | M | Vein | Au. | Large tabular masses of qz, some with stringers extending into the country rock, contain aspy and free Au; several hundred tons of ore said to average about 0.3 oz Au per ton were mined in early 1900's | | V, DS |
| 71 | Mendenhall | 58°26'N, 134°35'W | P | Vein; dissem | Au,Pb | Qz veinlets in interbedded slate and green chloritic schist contain sparse po, aspy, and gn; slate adjoining stringers locally contains abundant disseminated aspy. Nearby mafic dike 100 ft wide is cut irregularly by albite-calc veinlets with a little po; free Au can be panned from this rock. 85-ft crosscut tunnel | | V, DS |
| 72 | Treasury Hill | 58°25'N, 134°40'W | P | Vein; dissem | Au | 50-ft wide zone of aspy-bearing qz veins cut slate and mafic igneous rocks that locally contain disseminated aspy, py, and po. Vein material contains as much as 0.145 oz Au per ton. Prospected in early 1900's | | V, DS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 73 | Dull and Stephens | 58°24'N, 134°38'W | P | Vein; dissem | Au | Irregular masses of auriferous qz in altered volcanic breccia. A little py and aspy in country rock next to qz masses | | V, DS |
| 74 | Auke Bay | 58°23'-58°24'N, 134°38'W | P | Unknown | Au(?) | Development reported in early 1900's. No other data | | -- |
| 75 | Winn | 58°23'N, 134°38'W | P | Vein; dissem | Au(?) | Qz-albite-carbonate veinlets cut an altered dike which, near the veinlets, contains disseminated py and aspy. 20 ft tunnel in late 1800's. No data on Au content | | V, DS |
| 76 | Nugget Creek | 58°26'N, 134°29'W | P | Placer | Au | Small Au nuggets found in thin layers of gravel | | Placer |
| 77, 78, 79 | Lemon Creek | 58°22'- 58°24'N, 134°24'-134°28'W | M | Placer, (vein) | Au, (Cu,Pb, Zn) | A little placer mining in early 1900's of gravel on glacial clay in a bedrock-dammed basin. Near placer, two narrow qz veins in a gneissic diorite dike contain po, gn, sl, and cp | | V (77, 78)<br>Placer (79) |
| 80 | Clark (Lemon Creek) | 58°22'N, 134°26'W | P | Vein | Au,Cu | Qz veins as much as 3-4 ft thick in slate and mafic igneous rocks contain po, and a little cp; highest Au values about 0.05 oz per ton | | V |
| 81 | -- | 58°23'N 134°28'W | C | Placer | Au | -- | | Placer |
| 82 | -- | 58°20'N, 134°35'W | C | Lode | Au | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 83 | Doran | 58°20'N, 134°28'W | P | Vein | Au(?) | Shattered, sheared and altered albite diorite dike is traversed by pyritic qz -albite-carbonate veinlets. No data on valuable mineral content, if any. 130 ft of tunnel and drift | | V |
| 84 | Salmon Creek | 58°20'N, 134°28'W | P | Placer | Au(?) | -- | | Placer |
| 85 | Wagner | 58°20'N, 134°28'W | M(?) | Vein | Au(?),Cu, Pb,Zn | At least one vein 8 ft thick between slate and greenstone contains qz, carbonate, albite, mica, rt, aspy, py, cp, sl, gn, and td. No data on Au content. 1,150 ft of underground development in early 1900's. Possible minor production | | V |
| 86 | -- | 58°20'N, 134°25'W | C | Lode | Au | -- | | -- |
| 87 | Hallam | 58°19'N, 134°24'W | P | Vein | Au | Free Au in qz veins in black slate between greenstone footwall and schistose hanging wall. Slate and greenstone locally contain disseminated py. Prospected in early 1900's. No recorded production | Spencer, 1906, p. 63-66 | V, DS |
| 88 | Boston | 58°18'N, 134°25'W | P | Vein; dissem(?) | Au | Sulfide bearing veinlets or disseminated sulfides in albite diorite dike. Low Au values. 118 ft shaft and 500 ft of drifts and crosscuts in early 1900's. No record of production | | V |
| 89 | -- | 58°19'N, 134°28'W | C | Placer | Au | -- | | Placer |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 90 | -- | 58°18'N, 134°26'W | C | Lode | Au | -- | | -- |
| 91 | -- | 58°17'N, 134°25'W | C | Lode | Au | -- | | -- |
| 92 | -- | 58°17'N, 134°25'W | C | Lode | Au | -- | | -- |
| 93 | -- | 58°17'N, 134°24'W | C | Lode | Au | -- | | -- |
| 94 | -- | 58°16'N, 134°23'W | C | Lode | Au | -- | | -- |
| 95 | -- | 58°16'N, 134°23'W | C | Placer | Au | -- | | Placer |
| 96 | Douglas | 58°16'N, 134°25'W | P | Vein; dissem | Au,Cu,Zn | Glassy qz (-calc) stringers in altered sheared diorite dike about 70 ft thick in black slate. Stringers and probably diorite contain sparsely disseminated cp, py, and sl. Tunnel 120 ft long. Diorite in tunnel reported to have average assay value of about 0.17 oz Au per ton | | V, DS |
| 97 | Jersey | 58°16'N, 134°24'W | P | Dissem(?) | Au | Bedrock is greenschist interbedded with thin bands of slate, with locally abundant disseminated(?) sulfides. Shaft and crosscut driven in early 1900's. No record of production | | DS(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 98 | -- | 58°15'N, 134°23'W | D | Lode | Au | -- | | -- |
| 99 | Yakima | 58°15'N, 134°23'W | P | Dissem | Au(?),Pb, Zn | Intercalated slate, greenstone, and sericite schist contain considerable qz and calc and much disseminated py. Pyritic zone is at least 300 ft wide and a mile long. Gn and sl in material on dump. Several hundred feet of underground workings in early 1900's, but no recorded production. No data on possible Au content | | DS |
| 100, 101 | Treadwell Mines | 58°15'- 58°16'N, 134°21'-134°22'W | M | Vein; dissem | Ag,Au,Cu, Pb,Mo,W, Zn | Ore deposits consisted of Au and sulfide-bearing qz and qz-calc veins in shattered "albite-diorite" (altered feldspar porphyry) sill in sequence of slate below a greenstone (basaltic metatuff or agglomerate) hanging wall; slate inclusions in veins also mineralized. Metallic minerals in ore include free Au, py, po, mag, mo, cp, gn, sl, td, native As, rg, op, and (from heavy-mineral concentrate from tailings) sc. Mineralized zone was at least 3,500 ft long and extended beneath Gastineau Channel. From sealevel, underground workings were more than 2,000 ft deep. Total lode production, 1882-1922, was $67.5 million from milling 28.8 million tons of ore. Breakdown of production into Au, Ag, and Pb is not available | Spencer, 1905, p. 69-87 | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 102-104 | Alaska-Juneau area | 58°18'- 58°19'N, 134°20'-134°22'W | M | Vein; Dissem | Ag,Au,Cu, Pb,Zn | Lode system is a network of qz veins from a few in. to 2-3 ft thick in footwall of Perseverance Slate near the contact of amphibolite (which probably is basaltic metatuff), and in the amphibolite. Locally, the slate and amphibolite also contain disseminated po and mag. In addition to Au, veins carry py, po, aspy, gn, sl, cp, and considerable Ag. Veins are most abundant where the amphibolite interfingers with slate. Lode system is about 300 ft wide and 3.5 mi long; divided into two sections by Silverbow fault. Deposit discovered and staked in 1880 and mined until 1944 by glory holes and miles of underground workings. Total cumulative production, including clean-up operations of the mill after the mine was closed, was about 3.5 million oz Au, 1.9 million oz Ag, and 40.2 million lb Pb from 88.5 million tons of ore, of which 47.2 million tons were milled. | Herreid, 1962, p. 64-65; Spencer, 1906, p. 58-59, 68-69,73-74; Twenhofel, 1952 | V, DS |
| 102 | Ebner Humbolt | | | | | | | |
| 103 | Alaska-Juneau | | | | | | | |
| 104 | Groundhog Perseverance | | | | | | | |
| 105-107 | Gold Creek | 58°18'- 58°19'N, 134°20'-134°22'W | M | Placer | Au | Placers were residual on lodes (eluvial), and stream placers in bedrock basins. Total Au production, 1880-1940, was about 63,280 fine oz | | Placer |
| 108 | Alaska-Juneau dump | 58°17'N, 134°22'W | P | Placer | Au,Pb,W, Zn | Sluice-box concentrate included sl, gn, Au, and sc. A little Au has been sluiced from tailings | | Placer |

JUNEAU QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 109 | -- | 58°19'N, 134°20'W | C | Lode | Au | -- | | -- |
| 110 | Lurvey | 58°18'N, 134°20'W | M | Placer | Au | Auriferous gravel in small lake and in talus above lake | | Placer |
| 111 | Clark (Carlson Creek) | 58°20'N, 134°16'W | P | Vein | Ag,Au,Pb, Sb,Zn | Qz veins in breccia zones in schist and gneiss contain sparse sulfides, including py, sb, aspy, sl, and gn. Samples probably of richest material contained 0.12-1.03 oz Au per ton; one sample of vein material with sb contained 4.25 oz Ag per ton. 150-ft tunnel | | V |
| 112 | Bull Consolidated | 58°18'N, 134°19'W | P | Vein(?) | Au | Auriferous lode at head of Gold Creek. A few sacks of ore removed in about 1905 for testing, but no other development | | V(?) |
| 113 | Lurvey Creek | 58°17'N, 134°20'W | O | Placer | Au | Gravel in cirque basin presumably contains Au; no other data | | Placer |
| 114 | Silver Queen | 58°17'N, 134°19'W | M | Vein | Ag,Au,Cu Pb,Sb,Zn | About a 400-ft wide zone containing several en echelon, lenticular qz veins in black slate and greenstone. Veins are as much as 12 ft thick. Metallic minerals in veins include py, argentiferous gn, sl, cp, po, aspy, td, pyrt, native Ag, and sb. About 7,500 ft of underground workings and stopes. Production in early 1900's was about 22,500 fine oz Au from ore that averaged about $40 per ton (1900). Slate and greenstone contain disseminated py | | V, DS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 115 | -- | 58°17'N, 134°21'W | C | Lode | Au | -- | | -- |
| 116 | -- | 58°16'N, 134°20'W | C | Lode | Au | -- | | -- |
| 117 | -- | 58°16'N, 134°20'W | C | Lode | Ag,Au | -- | | -- |
| 118 | -- | 58°16'N, 134°19'W | C | Placer | Ag,Au | -- | | Placer |
| 119 | Anderson | 58°17'N, 134°18'W | P(?) | Vein; dissem | Ag,Au,Pb, Zn | Qz veins 2-4 ft thick and qz stringers in pyritic black slate contain py, sl, and gn. Au and Ag probably present, but no data on tenor. Tunnels 40-50 ft long driven on two veins | | V, DS |
| 120 | Gould & Curry | 58°17'N, 134°16'W | M | Vein; dissem | Au,Cu,Zn | Three qz veins about 15 in. thick in pyritic slate and schistose igneous(?) rock. Veins contain sl, po, cp(?), py and free Au. Production in 1895 was reported as about 1,250 fine oz Au | | V, DS |
| 121 | Golden Treasure | 58°16'N, 134°15'W | P(?) | Vein(?) | Au(?) | -- | | V(?) |
| 122 | Reagan | 58°16'N, 134°17'W | P | Vein; dissem | Ag,Au,Cu, Pb,Zn | Qz vein in pyritic black slate; in places, gouge along walls. Sulfides reported are gn, sl, cp, py, and td. Electrum (Au-Ag alloy) in seams and fractures. Several hundred ft of workings in early 1900's, but no recorded production | | V, DS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 123 | Nelson-Lott | 58°16'N, 134°16'W | P | Vein(?) | Au | 1,200 ft adit, 1915-1916. No other data | | V(?) |
| 124 | Alaska-Taku | 58°16'N, 134°15'W | P | Vein | Au(?) | Stringer lodes in slate(?). No other data | | V |
| 125 | Middle Peak | 58°15'N, 134°15'W | O | Vein | Cu,Pb | Py, cp, and secondary Cu minerals in qz veins in volcanic rocks that locally contain a little gn | | V |
| 126 | -- | 58°14'- 58°16'N, 134°12'-134°14'W | C | Lode | Au | -- | | -- |
| 127 | -- | 58°13'N, 134°11'W | C | Lode | Au | -- | | -- |
| 128 | Penn-Alaska | 58°12'N, 134°10'W | P | Lode | Au(?) | Auriferous(?) qz veins(?) near Taku Inlet; some work in 1914 | | V(?) |
| 129 | Alaska Treasure | 58°13'N, 134°20'W | M | Vein; dissem; massive(?) | Au,Cu,Pb, Zn | Country rock is phyllite, andesitic, or basaltic agglomerate, felsic tuff, and minor slate. Ore is in narrow bands of qz-sericite-py schist and consists of qz and calc veinlets containing auriferous py, cp, gn, sl, and td(?). Deposit is part of a belt of disseminated-sulfide-bearing altered (sericitized, silicified) rocks 1 mi wide and 1.5 mi long; ore zone is 90 ft wide and traceable on surface for 2,000 ft. 3,650 ft of underground workings in early 1900's. Mill test of one ton of picked ore indicated about 0.34 oz Au per ton. Production not known, but probably small | | V, DS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 130 | Red Diamond | 58°13'N, 134°21'W | P | Vein; dissem | Au(?) | Band of altered schist up to 36 ft wide between narrow gouge zones contains disseminated py and qz stringers. 120-ft tunnel. Parallel similar zone zone is wider, but contains less py and qz | | V, DS |
| 131 | Mammoth (Douglas Is.) | 58°13'N, 134°21'W | P | Vein; dissem | Au(?) | Py and qz stringers in 2 bands of bleached schist intercalated with greenstone, greenschist, and slate. Crosscuts driven in early 1900's | | V, DS |
| 132 | Portage | 58°17'N, 134°51'W | P | Vein | Au,Cu,Pb | Lenticular qz masses in slate carry cp, py, and small amounts of gn. Assays in early 1900's indicated low values in Au. Small shaft, opencuts, and tunnel. Early reports also describe a 30-ft wide "belt of mineralized schist similar to that at the Mammoth group" (no. 145). | | V, DS |
| 133 | Bear Creek | 58°15'N, 134°47'W | P | Vein | Asbestos | Tremolite (not chrysotile) asbestos in amphibolite schist. Brittle fibers up to 18 in. long. Prospected in early 1900's | | NOS(?) |
| 134 | -- | 58°16'N, 134°49'W | P | Placer | Au | -- | | Placer |
| 135 | Mansfield | 58°16'N, 134°51'W | P | Vein | Cu,Pb,Zn | Qz veins 3-6 ft wide in schist contain considerable cp, po, and some gn and sl. 20-ft tunnel on main vein in early 1900's. No data on possible precious metal content. No record of production | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 136 | -- | 58°14'N, 134°54'W | C | Lode | Au | -- | | -- |
| 137 | Admiralty-Alaska (A); Mertie Lode, Funter Bay (B) | 58°13'- 58°15'N, 134°50'-134°54'W | M | (A) Vein | Au,Cu,Pb, Zn | (A) Qz veins in schist, phyllite, and other metamorphic rocks. Minerals in veins included free Au, py, po, gn, sl, and cp. 10,000-15,000 fine oz Au produced in early 1900's. | Buddington, 1926, p. 41-46; Reed, 1942, p. 349-361; Holt and Moss, 1946; Barker, 1963, p. 1-10 | V (A) |
| | | | | (B)Stratiform | Co,Cu,Ni | (B) Upper(?) Mesozoic gabbro-norite pipe intrudes qz-mica schist. Po, pent, and cp are concentrated in olivine-hnbd gabbro in the keel of the pipe; other gabbro and norite contain much less sulfide. Explored by crosscuts and drill holes. Reported resources are about 560,000 tons averaging 0.35% Cu, 0.34% Ni, and 0.15% Co (Bundtzen and others, 1984, p. 43) | | MOS(B) |
| 138 | Alaska Dano | 58°12'- 58°14'N, 134°52'-134°54'W | M | Vein | Ag,Au,Cu, Pb,Zn | Numerous qz fissure veins in mica and chlorite schists contain py, po, gn, cp, sl, secondary Fe and Cu minerals, and free Au; some assays indicate high Ag values. Production in in early 1900's was 2 small shipments that contained about 5.8 and 3.9 oz Au per ton. Total production probably no more than 100 oz of Au. Several hundred feet of shafts, drifts, and tunnels | | V |
| 139 | -- | 58°12'N, 134°44'W | C | Placer | Au | -- | | Placer |
| 140 | -- | 58°11'N, 134°45'W | C | Placer | Au | -- | | Placer |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 141 | -- | 58°11'N, 134°45'W | C | Placer | Au | -- | | Placer |
| 142 | -- | 58°11'N, 134°46'W | C | Lode | Au | -- | | -- |
| 143 | -- | 58°10'N, 134°45'W | C | Lode | Au | -- | | -- |
| 144 | Hawk Inlet | 58°10'- 58°14'N, 134°46'-134°50'W | M | Vein | Ag,Au,Cu, Pb,Zn | Qz fissure veins in qz-mica schist and phyllite. Veins are up to 50 ft thick and carry Au, Ag, py, gn, sl, and cp. In 1926, assays indicated values in Au and Ag of $12 per ton. Production through about 1940 amounted to more than $200,000. Several hundred feet of underground workings | Buddington, 1926, p. 41-44, 47-50 | V |
| 145 | Mammoth (Admiralty Island | 58°07'N, 134°39'W | P | Dissem; massive(?); vein | Ag,Au,Pb, Zn | Several-hundred-foot wide belt of intercalated qz-musc-chl- and minor calcsilicate schist containing dissem py. Three east-trending zones 25-75 feet wide in this belt contain 1-6 in thick qz-carbonate-mariposite veins containing py, sl, gn, and some free Au. High Au and Ag assays reported. 165 ft tunnel in early 1900's. No production | | DS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 145a | Greens Creek ("Big Sore") | 58°04'N, 134°37'W | P | Stratiform: massive, dissem, vein | Ag,Au,Cu, Pb,Zn | Stratabound volcanogenic massive sulfide deposit in possibly Upper Triassic rhyodacite or dacite metatuff. Sulfides include py, po, sl, gn, cp. Deposits range from 0.5 ft thick Ag- and Au-rich zones to 90 ft thick basemetal zones. Development includes a 4,300 ft exploration adit and more than 33,000 ft of diamond drilling. Drilling results reported in 1983 (Bundtzen and others, 1984, p. 18) indicated reserves of about 4 million tons of ore containing 0.5% Cu, 2.5% Pb, 8-10% Zn, about 10 oz Ag per ton, and 0.1 oz Au per ton | Dunbier and others, 1979 | VM |
| 146 | -- | 58°02'N, 134°48'W | O | Dissem | Cr,Ni | Disseminated sulfide and oxide minerals in altered (serpentinized) ultramafic sill | | MOS |
| 147a,b | -- | 58°04'N, 134°27'W | P | Vein | REE | X-ray spectrographic analysis of heavy minerals from Cretaceous(?) pegmatite veins shows Ci, La, Nd, Nb, Pr, Th(?), Y, Zr | | MUR |
| 148 | -- | 58°05'N, 134°01'W | C | Placer | Au | -- | | Placer |
| 149 | -- | 58°05'N, 134°01'W | C | Lode | Fe | -- | | -- |
| 150 | -- | 58°05'N, 134°00'W | C | Placer | Au | -- | | Placer |
| 151 | -- | 58°05'N, 134°02'W | C | Lode | Fe | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 152 | -- | 58°04'N, 134°01'W | C | Lode | Au,Ni | -- | | -- |
| 153 | -- | 58°23'N, 134°53'W | O | Dissem | -- | Mag crystals in gneissic calc-silicate marble | Lathram and others, 1965, p. R44, loc. no. 9 | S(?) |
| 154 | -- | 58°20'N, 134°52'W | O | Vein | -- | Po and py in calc veinlets in schist | Lathram and others, 1965, p. R44, loc. no. 3 | V |
| 155 | -- | 58°19'N, 134°51'W | O | Dissem | *Cu, Zn | Disseminated mag, py, cp in brown-weathering schist | Lathram and others, 1965 p. R44, loc. no. 8 | DS |
| 156 | -- | 58°12'N, 134°49'W | O | Vein | *Cu,Pb | Disseminated py, po, gn in siderite-cemented qz breccia | Lathram and others, 1965, p. R44, loc. no. 4 | V |
| 157 | -- | 58°07'N, 134°46'W | O | Dissem | *Cu | Py and minor cp in schist | Lathram and others, 1965, p. R44, loc. no. 5 | DS |
| 158 | -- | 58°06'N, 134°40'W | O | Vein | *Pb,Zn | Py in spongy qz associated with serpentinite | Lathram and others, 1965, p. R44, loc. no. 7 | V |
| 159 | -- | 58°03'N, 134°32'W | O | Dissem | *Zn | Disseminated py in granulite-gneiss | Lathram and others, 1965, p. R44, loc. no. 2 | DS |
| 160 | -- | 58°04'N, 134°11'W | O | Dissem | -- | Py crystals as much as 1 in. long in black slate, phyllite | Lathram and others, 1965, p. R44, loc. no. 17 | DS |

*Detected by X-ray spectrographic examination

KETCHIKAN QUADRANGLE
(latitude 55°-56°N; longitude 130°-132°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | 5/BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1 | Howard | 56°00'N, 134°04'W | P | Vein | Ba,Pb,Zn | Qz stringer lode in granodiorite. Veins locally contain py, gn, sl and ba. Open cuts and stripping | | V |
| 2 | Last Shot | 56°00'N 130°03'W | P | Vein | Ag,Au,Cu, Pb,W,Zn | Qz vein in Texas Creek Granodiorite ranges from 5 cm to 4 m thick and contains a lens of almost solid sulfide up to 50 cm thick and at least 10 m long; gn, py, sl, po, cp, td, and fb; minor sc also reported; 65 cm channel sample across sulfides shows Au, 0.08 oz per per ton; Ag, 11.3 oz per ton; 6.2% Pb, and 4.85% Cu. Pits, opencuts, and 8 m adit | Buddington, 1929, p. 75-76; Byers and Sainsbury, 1956, p. 136 | V, S(?) |

5/Geologic descriptions of deposits in the Ketchikan quadrangle are adapted mainly from summaries in one or more of the following general references: Berg and others (1981, p. 59-70); Cobb (1972e); Cobb and Elliott (1980); and Elliott and others (1978). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claims map for the quadrangle (U.S. Bureau of Mines, 1977a).

## KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 3 | Fish Creek | 56°00'N, 130°03'W | M | Vein | Ag,Au,Cu, Pb,W,Zn | Qz veins up to 1 m wide are mainly in Texas Creek Granodiorite near contact with bedded country rocks. Gn, sl, py, td, cp and minor sc occur in these veins; lenticular bodies of po with minor cp, py, and aspy also present locally. Assays of richest material range from 103 to 706 oz Ag per ton, 17 to 39% Pb, trace to 7% Cu, and less than 1 oz Au per ton. Several pits, adits, and drifts | Buddington, 1929, p. 68-71; Byers and Sainsbury, 1956, p. 138 | V, P, S(?) |
| 4 | Sixmile | 55°59'N, 130°04'W | P | Vein | Ag,Au,Cu, Pb,Zn | Narrow stringers and veins of qz in Texas Creek Granodiorite locally contain visible free gold; py, gn, and minor cp and sl. Two adits and surface workings | Buddington, 1929, p. 76-77 | V |
| 5 | Bishop | 55°59'N, 130°03'W | P | Vein | Ag,Au,Cu, Pb | Qz vein .5 to 2 m thick in Texas Creek Granodiorite; po, py, minor cp and gn; Au and Ag content reported low | | V |
| 6 | Mountain View | 55°59'N, 130°03'W | M | Vein | Ag,Au, ba, Cu, Pb, W, Zn | Qz (-ba) veins in Texas Creek Granodiorite and adjacent country rocks. Metallic minerals include py, po, sc, cp, gn, sl, minor td and fb; also reported are Ag, Au, anglesite, aspy, az, chalmersite, cv, ml, ms, mo, proustite, and spec. Principal vein averaged 1.23% $WO_3$, and 0.1 and 6.4 oz Au and Ag per ton across an average width of 57 cm; more than 1,100 m of underground workings but the only ore shipments were for mill tests | Buddington, 1929, p. 63-67; West and Benson, 1955, p. 30-32, 34-44; Byers and Sainsbury, 1956, p. 123, 137-138 | V, P, S(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 7 | Deleted | | | | | | | |
| 8 | Lucky Boy Extension | 55°59'N, 130°03'W | P | Vein | Cu,Pb,W, Zn | Fault zone 60 to 90 cm thick in slaty quartzite contains qz stringers totaling 15 to 30 cm in thickness; py, gn, and sl locally with minor po and cp; crosscut adit and drift total 30 m | | V |
| 9 | Victoria | 55°59'N, 130°02'W | P | Vein(?) | Unknown | Sparse sulfide(?) minerals. Adits | | V(?) |
| 10 | Boundary Line | 55°55'N, 130°01'W | C | Lode | Au | -- | | -- |
| 11 | J and L | 55°53'N, 130°13'W | C | Lode | Cu,Mo(?) | -- | | -- |
| 12 | Alpine | 55°46'N, 130°10'W | C | Placer | Fe | Placer claim near mouth of Davis River | | Placer |
| 13 | Ferro | 55°46'N, 130°11'W | C | Placer | Fe | Placer claims near mouth of Davis River | | Placer |
| 14 | Commonwealth | 55°46'N, 130°12'W | P | Vein; dissem(?) | Au,Cu,Mo, Zn | Qz(?) veins in a narrow band of quartzite, schist and marble in qz monzonite; mo, sl, and cp are sparsely distributed in veins and country rock; two short adits | Buddington, 1929, p. 111-112 | V, P(?) |
| 15 | -- | 55°50'N, 130°25'W | O | Dissem | Cu | Trace of cp with py and po in rusty-weathering zone in paragneiss | Berg and others, 1977, p. 132 | DS |
| 16 | -- | 55°59'N, 130°51'W | O | Vein | Cu,Mo | Small qz veins in a zone of iron-stained paragneiss; trace of mo and cp | Berg and others, 1977, p. 123-125 | V, DS |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 17 | -- | 55°56'N, 130°49'W | 0 | Dissem | Cu | Trace cp and minor po in broad rusty-weathering zone in paragneiss; low values of Cu, Pb, Zn, Mo, and Ag | Berg and others, 1977, p. 124-126 | DS |
| 18 | -- | 55°55'N, 130°43'W | 0 | Dissem | Cu | Trace cp and po in rusty-weathering zone in paragneiss | Berg and others, 1977, p. 126-127 | DS |
| 19 | -- | 55°54'N, 130°42'W | 0 | Dissem | Cu,Mo | Sparse cp with py in rusty-weathering zone in pelitic schist; one sample contained 150 ppm Mo | Berg and others, 1977 p. 126, 128 | DS |
| 20 | -- | 55°50'N, 130°40'W | 0 | Dissem | Cu | Minor cp in zone of rusty-weathering pyritic paragneiss; low values of Cu, Pb, Zn, Ag, and Mo reported | Berg and others, 1977, p. 129-132 | DS |
| 21 | Gnat | 55°50'N, 130°54'W | P | Vein | Cu,Mo,Pb | Qz fissure vein 2.5 m thick in gneissic qz diorite contains cp, mo, gn, and py. Reported values to 1500 ppm Pb, 1400 ppm Cu, and 910 ppm Mo | Buddington, 1929, p. 120; Berg and others, 1977, p. 121-123 | V |
| 22 | Alamo | 55°45'N, 130°45'W | P | Dissem, massive(?); vein | Ag,Au,Cu, Zn | Zone 25 m wide in paragneiss contains disseminations and veinlike masses of cp, py, po, and sl. Sampling by USBM showed as much as 0.2 ppm Au, 50 ppm Ag, several thousand ppm Zn, and 500 ppm Cd; deposit may average 0.2-0.7% Cu. Several shallow opencuts and trenches, drilling | Berg and others, 1977, p. 116-120 | V, MS |
| 23 | -- | 55°44'N, 130°52'W | 0 | Vein | Cu,Mo | Minor amount cp and mo in 55 cm wide qz vein at contact of paragneiss and qz diorite | Berg and others, 1977, p. 134-135 | V |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 24 | Marble Copper | 55°43'N, 130°52'W | P | Dissem | Ag,Au,Cu | Ml and traces of cp in a marble-skarn zone in paragneiss near contact with foliated granodiorite; a 55-cm-long channel sample from shallow cut assayed 4,000 ppm Cu, 30 ppm Ag, and 3.5 ppm Au | Berg and others, 1977, p. 120-121 | S |
| 25 | -- | 55°43'N, 130°52'W | D | Dissem | Cu | Py and minor cp in paragneiss; chip sample across 13 m of gneiss assayed 1,000 ppm Cu | Berg and others, 1977, p. 135 | DS |
| 26 | Burroughs Bay | 56°00'N, 131°18'W | C | Vein; dissem | Mo | Mo disseminated in granite and qz porphyry dikes; mo-qz veins and mo fracture coatings; vein and disseminated py, no data on tonnage and grade | | P(?) |
| 27 | Ekblad | 55°42'N, 131°27'W | C | Lode | Au | -- | | -- |
| 28 | Gold Standard | 55°39'N, 132°00'W | M | Vein; dissem(?) | Au,Bi,Pb | Auriferous qz veins containing py, tl, and a little gn in greenschist(?). Principal vein 15 cm to 2 m thick exposed over 300 m along strike. Probably produced a few thousand oz of Au from 1898 to WW II. 30-m shaft with drifts; other short tunnels and shafts | Wright and Wright, 1908, p. 153-155 | V, DS(?) |
| 29 | Gold Mountain | 55°37'N, 131°59'W | M | Vein; dissem | Au,Cu,Pb | Qz veins and stringers in pyritic(?) greenschist; py, cp, gn, and Au; some Au production reported; surface work and over 200 m of underground workings | | V, DS |
| 30 | Novatney | 55°37'N, 131°58'W | C | Vein | Au | Narrow qz veins in schist | | V |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 31 | Rainy Day | 55°37'N, 131°58'W | P | Vein | Au,Pb,Zn | One-m-thick qz vein in a porphyritic granodiorite dike. Small amounts py, sl, gn, and Au; opencut and 33 m tunnel | | V |
| 32 | Kingston | 55°37'N, 131°58'W | P | Vein; dissem(?) | Au | Qz veins in 2 to 10 m wide zone in pyritic(?) chlorite schist; assays of $2.50 to $600 Au per ton reported in early 1900's | | V, DS(?) |
| 33 | Keystone | 55°36'N, 132°00'W | M | Vein; dissem | Ag,Au | Qz stockwork in a belt of greenschist 6 to 12 m thick. Veins and country rocks contain abundant py and generally low values in Au and Ag. Crosscut tunnel, shaft and more than 200 m of underground workings | | V, DS |
| 34 | Old Glory | 55°37'N, 131°59'W | M | Vein; dissem | Au | Qz vein in greenschist and argillite; minor sulfides and free Au in vein, sulfides locally disseminated in adjacent country rocks. Adits and drifts total several tens of meters | | V, DS |
| 35 | Last Chance | 55°36'N, 131°59'W | P | Vein; dissem | Au,Cu | Qz vein of irregular width in a shear zone in pyritic(?) chlorite schist; minor cp and bn, average Au values low; short drift | | V, DS |
| 36 | Mary T | 55°36'N, 131°58'W | P | Vein; dissem | Au,Cu | Belt of chlorite or sericite schist containing qz, py, cp, secondary Cu minerals, and Au; low values reported; pit | | V, DS |
| 37 | U.S. | 55°36'N, 131°58'W | P | Vein | Au | Qz vein in chlorite schist carries py and Au; low values; explored by surface cuts and short prospect tunnels | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 38 | Little Maumee | 55°36'N, 131°57'W | P | Vein | Au,Cu | Small qz vein in porphyritic diorite; py, cp, and Au reported | | V |
| 39 | Blue Bucket | 55°35'N, 131°57'W | P | Vein | Au | Qz vein in chlorite and sericite schist contains py, low Au values. Short prospecting tunnel | | V |
| 40 | Caamano Point | 55°31'N, 131°59'W | P | Vein; massive dissem(?) | Sb | Veinlets and irregular masses of sb in brecciated and partly dolomitized and silicified limestone; explored by two shallow shafts, 100 ft of drifts, and several opencuts | Sainsbury, 1957 | V |
| 40a | Bond Bay | 55°31'N, 131°58'W | D | Dissem | Ag,Au | SS analyses of samples of py-rich qz- and carbonate-veined phyllite and marble on coast about 1.8 km NNE of Caamano Pt. contain up to 2 ppm Ag, more than 1% As, 1,000 ppm Sb, and 7.5 ppm Au | | DS |
| 41 | Lucky Four Hump Island | 55°31'N, 131°45'W | C | Dissem | Ag,Co,Cu, Mo | Fe- and Cu-stained, hydrothermally altered schist containing disseminated py, cp, and possibly other sulfide minerals. SS analyses of mineralized rock samples contained up to 10 ppm Ag, 500 ppm Co, 2.0% Cu, and 30 ppm Mo | | DS |
| 42 | Golden Bear | 55°29'N, 131°45'W | C | Lode | Au | -- | | -- |
| 43 | Conkle | 55°33'N, 131°41'W | C | Lode | Cu,Fe | -- | | -- |
| 44 | Prince | 55°32'N, 131°41'W | C | Lode | Fe | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 45 | Crystal | 55°32'N, 131°38'W | C | Lode(?) | Unknown | -- | | -- |
| 46 | J.C. | 55°29'N, 131°37'W | C | Lode | As,Au,Fe | -- | | -- |
| 47 | -- | 55°30'N, 131°30'W | C | Lode | Cu,Pb(?) | -- | | -- |
| 48 | Lou Jo | 55°31'N, 131°29'W | C | Lode | Ag,Au | -- | | -- |
| 49 | -- | 55°28'N, 131°29'W | C | Lode | Cu,Pb,Zn | -- | | -- |
| 50 | Perk(?) | 55°35'N, 131°11'W | C | Lode | Cu,Pb,Zn | -- | | -- |
| 50a | Swan Lake | 55°37'N, 131°13'W | D | Dissem | Mo | Trace of very fine-grained mo disseminated in rusty-weathering 15 m thick felsic sill(?) that intrudes paragneiss. SS analysis of rock sample showed 150 ppm Mo | | P(?) |
| 51 | Ella Pt. | 55°30'N, 130°59'W | P | Dissem(?); massive(?) | Zn | Py and sl in sericitic schist | | SM(?) |
| 52 | White Knight | 55°20'N, 131°51'W | P | Vein; massive(?) | Au(?),Cu | Small masses of cp associated with py and po in greenstone; little development | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 52a | -- | 55°16'N, 131°50'W | P | Vein | Ag,Cu | Fe- and Cu-stained brecciated meta-rhyolite(?) containing qz, hem, cp, and py. Lode is approximately 3 m wide. SS analysis of a sample of mineralized breccia showed 1.5 ppm Ag and 2% Cu. Adit | | V |
| 52b | -- | 55°12'N, 131°49'W | P | Dissem; vein | Ag,Au,ba, Cu,Pb,Zn | Meter-wide rusty weathering fault breccia in dikelike mafic(?) igneous rock. Breccia contains qz, carbonate, ba, and small amounts of sulfide(?) minerals. SS analyses of samples of breccia and country rock showed up to 70 ppm Ag, 0.15 ppm Au, >0.5% Ba, 700 ppm Cu, 1.5% Pb, >1.0% Zn. 7-m adit | | V |
| 53 | Six Point | 55°23'N, 131°51'W | P | Vein | Au(?),Cu | Thin qz vein containing py and minor cp follows contact of altered diabase dike and slaty limestone; shaft and drift | | V |
| 54 | Easter | 55°24'N, 131°48'W | P | Vein | Au | Au- and py-bearing qz veins with trace aspy in slate and greenschist; reported values in early 1900's of $3 to $400 per ton; pit | | V |
| 55 | Typhoon | 55°24'N, 131°48'W | P | Vein | Au(?) | Py-bearing auriferous(?) qz vein 20 cm thick in slate | | V |
| 56 | Tongass | 55°24'N, 131°48'W | P | Vein | Au(?) | Py-bearing auriferous(?) qz vein 30 cm wide in slate | | V |
| 57 | Green Hornet | 55°23'N, 131°47'W | C | Lode | RA | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 58 | Ken Pond | 55°25'N, 131°43'W | C | Lode | Ag | -- | | -- |
| 59 | Beach | 55°22'N, 131°43'W | C | Lode | Au | -- | | -- |
| 60 | Little Sue | 55°22'N, 131°41'W | C | Lode | Au | -- | | -- |
| 61 | White Cliff | 55°21'N, 131°41'W | C | Lode | Au | -- | | -- |
| 62 | Hoadley | 55°21'N, 131°40'W | P | Vein | Au,Bi | Two sets of qz veins 10-60 cm thick in gabbro(?) intrusive into schist; older set contains mainly py and po, younger set contains aspy, free Au, and trace of tt; opencuts and short drift tunnels | | V |
| 63 | Wildcat | 55°21'N, 131°40'W | P | Vein; dissem | Au,Cu | Auriferous qz veins in diorite or gabbro intrusive in black slate; main vein 30 to 40 cm thick contains py and minor cp; wall rock locally contains disseminated py; explored by opencuts, short tunnels, and shafts; $20-$30 in Au per ton from 5-ton test shipment reported in early 1900's | | V, DS |
| 64 | Bear Mountain/ Malaspina | 55°21'N, 131°38'W | C | Lode | Au,Cu | -- | | -- |
| 65 | Laskawonda | 55°21'N, 131°38'W | P | Vein; dissem | Ag,Au,Cu | Phyllite and schist cut by a few small qz veinlets; py and cp occur in schist and veinlets, Au and Ag reported in early 1900's; two shafts and surface workings | | V, DS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 66 | Yenitia | 55°20'N, 131°38'W | C | Lode | Au | -- | | -- |
| 67 | Clairvoyance | 55°19'N, 131°41'W | C | Lode | Au | -- | | -- |
| 68 | Goldstone | 55°19'N, 131°38'W | C | Lode | Au | -- | | -- |
| 69 | Goldstream | 55°18'N, 131°38'W | M | Vein; dissem | Au,Cu,Pb, Zn | Sulfide-bearing qz veins, greenschist and qz-sericite schist. Main ore body was 1-2.5 m wide and consisted of quartz and country rocks containing py, cp, gn, sl, apsy, and native Au; several thousand tons of Au ore produced in early 1900's, values of $18 per ton reported; 35 m shaft with few hundred m of drifts | Wright and Wright, 1908, p. 177-178 | V, DS |
| 70 | Gold Flakes | 55°17'N, 131°38'W | C | Lode | Ag,Au,Pb | -- | | -- |
| 71 | Heckman | 55°18'N, 131°37'W | P | Vein | Au | 2.5-m wide zone of py-bearing qz-calc veins in chloritic schist. Opencut, 20 m shaft and drifts; low Au values | | V |
| 72 | Moonshine | 55°17'N, 131°37'W | P | Vein | Au | Two parallel qz veins 6 m and 2 m thick in greenstone; 4 m shaft and 10 m opencut; low Au values | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 73 | Birdseye | 55°19'N, 131°34'W | P | Vein; dissem | Au,Pb,Zn | Qz vein 1 to 1.5 m wide in porphyry dike in slate and schist; py, gn, sl, and Au present in vein and adjacent dike rock; ten-meter shaft and surface stripping | | V, DS |
| 74 | Gold Nugget | 55°18'N, 131°33'W | C | Lode | Au | -- | | -- |
| 75 | Sharon | 55°20'N, 131°31'W | C | Lode | Cu,Zn | -- | | -- |
| 76 | Mahoney | 55°26'N, 131°31'W | M | Massive | Ag,Au,Cu, Pb,Zn | Discontinuous tabular to lenticular body of massive sl and gn averaging about 30 cm thick in fine-grained dark gray micaceous phyllite. Massive sulfide layers are mainly parallel to the compositional layering of the host rock, but locally appear to intersect it. Opencuts and about 100 m of underground workings; 100 tons of Pb and Zn concentrates containing 2 oz Au, 347 oz Ag, 214 lbs Cu, 42,086 lbs Pb, and 74,829 lbs Zn were shipped in 1947-48; deposit contains an estimated 2,500 tons of ore averaging 6 or 7% Pb and about 28% Zn | Robinson and Twenhofel, 1953, p. 79-82 | SM(?) |
| 77 | -- | 55°25'N, 131°29'W | C | Lode | Ag | -- | | -- |
| 78 | Londevan | 55°24'N, 131°29'W | M | Vein | Ag,Au,Cu, Pb,Zn | Several qz veins up to 1 m thick cut dark schists; veins contain 5% or less py, sl, gn, and trace cp, Ag, and Au; ore was mined in early(?) 1900's and stockpiled at water's edge but not shipped. 1300 m of underground workings | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 79 | A. L. and S. | 55°23'N, 131°28'W | C | Lode | Ag,Au, Cu(?),Pb | -- | | -- |
| 80 | Peterson | 55°23'N, 131°28'W | P | Vein | Ag,Au,Cu, Pb,Zn | Qz-calc vein in schist contains py, gn, sl, po, and cp; Au and Ag also reported; two short drifts | | V |
| 81 | Blue Streak | 55°22'N, 131°29'W | C | Lode | Au,Cu,Ni | -- | | -- |
| 82 | Black Ridge | 55°17'N, 131°26'W | C | Lode | Ag,Au,Co, Cr | -- | | -- |
| 83 | Moth Bay | 55°18'N, 131°21'W | P | Massive; disseм; vein | Ag,Au,Cu, Pb,Zn | Massive py and po, subordinate sl, cp, gn, and minor bn and cv; form conformable lenses and discontinuous layers up to 3 ft thick, plus disseminations of py and probably other sulfides, in light brown mu-qz-calc schist. Opencuts and about 750 ft of tunnels. Au and Ag known only from analyses. No recorded production; measured and indicated resources are about 100,000 tons of 7.5% Zn and 1% Cu and 10,000 tons of 3% Cu; 100,000 additional tons of lower grade material | Robinson and Twenhofel, 1953, p. 59-71 | SM(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 83a | Head of Thorne Arm | 55°23-24'N, 131°15'W | O | Massive; dissem | Ag,Au,Co, Cu(?), Zn(?) | Stratiform massive sulfide occurrences. Ironstained argillite and qz-mu-calc schist contain abundantly disseminated py and bedlike layers up to a meter or so thick of nearly massive py and probably other sulfide minerals. Geochemical analyses of py-rich rock samples from several localities in this area show up to 10 ppm Ag, 0.1 ppm Au, 500 ppm As, 2,000 ppm Co, 150 ppm Cu, 30 ppm Mo, 210 ppm Zn | | SM |
| 84 | Lake | 55°25'N, 131°12'W | P | Vein | Pb,Zn | Qz veins in musc(?) and chl schist contain small amounts of py, gn, and sl | | V |
| 85 | Tyee | 55°23'N, 131°11'W | P | Vein | Au,Pb,Zn | Qz vein 1 m thick in granodiorite contains py, sl, gn, and low values in Au | | V |
| 86 | Massachusetts | 55°23'N, 131°10'W | P | Vein | Au,Pb,Zn | Qz vein 30-150 cm thick in musc(?) schist and greenschist contains py, gn, and sl; Au values of $12 per ton reported; opencuts, 10 m shaft, and 15 m drift | | V |
| 87 | Baltic Star | 55°23'N, 131°11'W | P | Vein; dissem | Au,Pb,Zn | Qz vein 0.5 m thick in schist contains py, sl, gn, and low free gold values. Schist contains disseminated sulfides | | V, DS |
| 88 | Baltic/ Queen | 55°23'N, 131°11'W | P | Vein | Au,Zn | Qz vein 0.3 to 2 m thick in schist contains py, sl, and low values in Au; opencuts and two short prospect tunnels | | V |
| 89 | Golden Rod | 55°23'N, 131°11'W | P | Vein | Au | Qz vein 5 m thick in aplite and gneissic granodiorite carries low Au values. Several opencuts | | V |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 90 | Salve | 55°23'N, 131°12'W | P | Dissem; vein | Au | Band of sulfide-bearing sericite schist contains qz stringers carrying py, low Au values; opencut and test pit | | V, DS |
| 91 | Sea Breeze | 55°22'N, 131°11'W | P | Vein | Au,Pb,Zn | Qz veins 0.3 to 2 m wide in or near porphyry dike in greenstone contain py, gn, sl, and occasional specks of Au. Open cuts and two short tunnels | | V |
| 92 | Sealevel | 55°22'N, 131°12'W | M | Vein; dissem | Ag,Au,Pb, Zn | Qz fissure veins that cut schistose intermediate or mafic metatuff(?) and dikes of altered feldspar porphyry. Ore is mainly qz containing py, gn, sl, and sparse flakes of native Au. Mineral content of a vein and adjacent wallrock appears greater where vein cuts porphyry dike. Opencuts and 40 m shaft with more than 400 m of drifts and crosscuts. Unknown amount of Au produced in early 1900's; Ag content not known | Wright and Wright, 1908, p. 144-146 | V, DS |
| 93 | Goo Goo | 55°22'N, 131°11'W | M | Vein | Au,Pb,Zn | Qz vein up to 6 m wide in greenschist contains py, sl, gn, and, reportedly, pockets of free gold. Surface cuts, pit, shaft, and adit. Some ore mined in early 1900's | | V |
| 94 | Majestic | 55°22'N, 131°11'W | P | Vein | Au,Pb,Zn | Qz vein 6 m wide in altered schist contains py, sl, gn, and minor Au. Picked samples assayed $30 per ton in early 1900's; pit and tunnel | | V |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 95 | Gold Banner | 55°22'N, 131°11'W | P | Vein; massive | Au,Pb,Zn | Qz vein 0.3 to 2 m thick in schist cut by a porphyry dike contains py, gn, sl, and occasional particles free gold; 20-m tunnel. On Gokachin Creek, a rusty-weathering outcrop about 10-m wide on north bank of creek consists of musc-rich qz-calc schist containing abundant disseminated py, and lenses and dis-continuous layers a few cm thick of mas-sive py, po, sl, and possibly gn (H. C. Berg, unpub. field data, 1980). | | V, MS |
| 96 | Baby George | 55°22'N, 131°11'W | P | Vein | Au(?) | Three m wide vein in argillite and greenschist | | V |
| 97 | Wild West | 55°22'N, 131°11'W | P | Vein | Au | Several qz stringers about 30 cm wide in argillite and sericite schist; low Au values; surface cuts | | V |
| 98 | High Horse | 55°22'N, 131°11'W | P | Vein | Au,Zn | Qz vein 15 cm to 1 m thick in schist contains py, sl, and low Au values; opencuts and short tunnel | | V |
| 99 | Ace | 55°13'N, 131°09'W | C | Lode | RA | -- | | -- |
| 100 | Alava | 55°14'N, 131°08'W | C | Stratiform(?) | Fe | Titaniferous mag in Jurassic or Cretaceous zoned ultramafic intrusion | | MOS |
| 101 | Quartz Ledge | 55°14'N, 131°01'W | C | Lode | Au | -- | | -- |
| 102 | Nanjan | 55°14'N, 130°59'W | C | Lode | Mo | -- | | -- |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 103 | Pyrite Lode | 55°16'N, 130°58'W | P | Vein | Mo | Mo-bearing qz vein in metamorphic rocks | | V |
| 104 | Reliance (Roe Point) (IXL) | 55°17'N, 130°57'W | P | Massive; dissem | Ag,Au,Cu, Zn | Metamorphosed stratabound massive sulfide deposit. Py, po, cp, and sl form massive layers and disseminations in rusty-weathering mica schist; Au and Ag also reported; adit and 30 m drift | | MS |
| 105 | Quartz Hill | 55°24'N, 130°29'W | P | Vein; dissem | Mo,U(?) | Porphyry Mo deposit in Oligocene granite porphyry stock. The deposit consists of a stockwork of mo-qz veins, mo-coated fractures, and disseminated grains of mo distributed throughout a granite outcrop area of of several square miles. According to industry reports, the deposit, which has been outlined by diamond drilling and by other surface and underground exploration, contains more than 1.5 billion tons of ore averaging about 0.136% Mo (Bundtzen, 1984, p. 43). Microprobe studies by USGS of samples of the granite porphyry show that a rutile-like accessory mineral contains traces of uranium (G. E. Desborough, pers. commun., 1978) | Hudson and others, 1977, 1979 | P, MUR(?) |
| 106 | Gullette | 55°09'N, 130°32'W | C | Placer | Au | Placer Au claim near the head of Marten arm | | Placer |
| 107 | QC | 55°09'N, 130°32'W | C | Placer | Au | Placer Au claim near the head of Marten Arm | | Placer |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 108 | Red River (Humpback Lake) | 55°04'N, 130°31'W | P | Dissem; massive(?) | Cu,Mo | Py, cp, po, mag, bn, and mo form small masses and disseminated grains along gneissic bands in metasedimentary rocks intruded by pegmatite and gneissic granodiorite. Mineral-rich bands range from few cm to 30 m thick; privately drilled, grade and tonnage information not available | | MS(?) |
| 109 | Grotto | 55°12'N, 131°44'W | P | Dissem; vein | Cu | Vein deposit in shear or breccia zone in greenschist; in early 1900's owners reported 11% Cu across 1.5 m mineralized zone; 150 m of drifts and crosscuts | | V, MS(?) |
| 109a | Bostwick Inlet | 55°12'N, 131°43'W | O | Massive; stratiform | Ag,Mo,Zn | Bedlike layer about 1.0 m thick of massive py, po(?), and possibly other sulfides occurs at the upper contact of Upper Triassic rhyolite. Sulfide layer is overlain by about 0.3 m of brecciated Upper Triassic carbonaceous siltstone in which the breccia is healed by calcite(?) and sulfide veinlets up to 3-4 cm thick. The sulfide-bearing zone is exposed along strike for about 10 m. SS analyses of 2 grab samples of massive sulfide show up to 3,000 ppm Zn, 30 ppm Mo, 0.7 ppm Ag, and 500 ppm As (H. C. Berg, unpub. field data, 1983) | | MS |
| 110 | Doe | 55°12'N, 131°45'W | P | Vein | Cu | Qz vein 1 to 2 m wide containing py and cp in siliceous chlorite schist | | V |
| 111 | Damon | 55°12'N, 131°45'W | P | Vein | Cu(?) | Py-rich qz vein in chlorite schist(?) | | V |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 112 | Hobo | 55°11'N, 131°45'W | P | Vein | Cu | 3 m vein with py and cp | | V |
| 113 | War Eagle | 55°11'N, 131°45'W | M | Vein | Au,Cu | Qz veins in shear/breccia zones in greenschist contain py, cp, and minor Au; 600 m crosscut tunnel | | V |
| 114 | Plutyas | 55°12'N, 131°44'W | P | Vein | Cu(?) | Qz vein containing abundant py in chlorite schist | | V |
| 115 | Big Joe | 55°12'N, 131°44'W | P | Vein | Cu | Qz vein 3 m thick in chlorite schist contains py and cp | | V |
| 116 | Jewel | 55°12'N, 131°44'W | P | Vein | Cu | Qz vein with py and cp. Short crosscut | | V |
| 117 | Buck | 55°11'N, 131°44'W | P | Vein | Au,Cu | Qz vein in altered quartzite and schist reported in early 1900's to "assay well" in Au and Cu | | V |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 118 | Bay View | 55°11'N, 131°44'W | M | Vein | Ag(?), Au(?), Cu, Zn | Qz- and calc-cemented fault breccia containing disseminations and small masses of py, cp, sl, and minor bn. Colloform calc and other textures indicate deposition at relatively shallow depth and low temperature (H. C. Berg, unpub. field data). Lode is in a fault-bounded block of trondhjemite cut by basalt dike; deposit is mainly in brecciated basalt; country rock adjoining fault block is rhyolitic metatuff. Small smelter shipment reported in early 1900's, but no recorded production or other grade or tonnage data. 100-ft tunnel. SS analyses of grab samples of massive sulfide ore showed up to 10 ppm Ag, 0.10 ppm Au, 200 ppm As, >2% Cu, and 150 ppm Sn | | V |
| 119 | Sanford | 55°11'N, 131°43'W | P | Vein | Cu | Vein, probably carrying py and cp, in shear zone(?) in chlorite schist; low values; short shaft and opencut | | V |
| 120 | Concord | 55°11'N, 131°45'W | P | Vein | Ag, Au, Cu, Zn | Sulfide-bearing qz-ba-carbonate veins in breccia zones in greenstone and trondhjemite; cp, sl, and a little Ag and Au; up to $72 Cu per ton reported early 1900's; opencuts and short tunnels | | V |
| 121 | Grenadier | 55°10'N, 131°45'W | P | Vein | Cu(?) | Breccia(?) zone in trondjemite(?) and greenstone. No other data | | V |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 122 | Friday | 55°10'N, 131°47'W | C | Vein | Cu | Py- and cp-bearing qz-carbonate (-ba?) veins in breccia zones in Fe-stained bedded and intrusive country rocks. Pits and short tunnels | | V |
| 123 | Club | 55°09'N, 131°46'W | C | Lode | U(?) | -- | | -- |
| 124 | Carita | 55°09'N, 131°46'W | P | Vein | Cu | Cp with qz and calc in vein or breccia(?) zone | | V |
| 125 | Boots | 55°09'N, 131°45'W | C | Lode | RA | -- | | -- |
| 126 | Black Jack | 55°09'N, 131°45'W | P | Vein | RA | Thin fissure(?) veins of pitchblende(?) in "serpentinized" basalt or gabbro that may be in fault contact with metamorphic country rocks. Deposit contains only traces of radioactive material. Several pits | | VR(?) |
| 127 | Washington | 55°10'N, 131°45'W | P | Vein | Cu | Py- and cp-bearing qz-jasper breccia at contact of diabase and trondhjemite(?) | | V |
| 128 | Julian | 55°10'N, 131°44'W | C | Lode | Cu | -- | | -- |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 129 | Dall | 55°10'N, 131°43'W | P | Vein; dissem | Ag,Au,ba, Cu | Disseminated py and cp, and py- and cp-bearing qz-carbonate-ba veins in fault breccia zones in Fe- and Cu-stained metamorphosed bedded and intrusive country rocks. Assays in early 1900's averaged 11% Cu per ton, $6 Au per ton, and low Ag values. Two shafts. Deposit drilled by private interests in 1950's(?) | | V |
| 130 | Annette Bay | 55°15'N, 131°31'W | 0 | Lode | Cu,Sb | Cu and Sb minerals reported | | -- |
| 131 | Nadzaheen Cove | 55°13'N, 131°29'W | 0 | Vein; dissem | Ag,Au,Pb | Qz lenses and veins up to 3 m wide and a few hundred m long in phyllite and fine-grained schist contain disseminated py and gn, and a few specks of Au. Country rocks also contain disseminated sulfides. Assays of veins(?) in early(?) 1900's showed 0.71 oz Au per ton; 0.91 oz Ag per ton | | V |
| 132 | -- | 55°13'N, 131°32'W | 0 | Surface stain | Cu | Trace of ml in conglomerate | | -- |
| 133 | -- | 55°12'N, 131°35'W | 0 | Vein | Ag,Au,Pb | Gn in thin, discontinuous calc-qz fissure veins in subhorizontal shear zone up to 6 m thick and a few hundred m long; country rock is trondhjemite; grab samples of vein assayed 1.38 oz Au per ton, 0.42 oz Ag per ton | | V |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 134 | Driest Pt. | 55°11'N, 131°36'W | D | Vein | ba,Pb | Crushed metarhyolite cut by sparse veinlets containing qz, calc, ba, and a few specks of gn | | V |
| 135 | -- | 55°10'N, 131°35'W | D | Vein | ba,Cu,Pb | Three(?)-m-wide shear zone in metarhyolite contains calc and qz veins carrying ba and hem, plus small amounts of gn, cp, and py | | V |
| 136 | -- | 55°11'N, 131°35'W | D | Vein | ba,Pb | Three-m-wide shear zone in brecciated metarhyolite contains veins and irregular masses of ba and calc, plus small amounts of hem and gn | | V |
| 137 | -- | 55°11'N, 131°33'W | D | Vein; dissem | Cu | Qz veinlets containing cp, py, hem, and secondary Cu minerals in brecciated trondhjemite | | V, DS |
| 138 | Hassler Harbor | 55°12'N, 131°25'W | D | Dissem | Cu | Sparsely disseminated cp in foliated trondhjemite | | V, DS |
| 139 | Ham Island | 55°11'N, 131°22'W | D | Placer | Au | Traces of Au in beach placer material and in qz float near qz-bearing slate and graywacke bedrock | | V, Placer |
| 140 | Beaverlodge | 55°11'N, 131°21'W | C | Lode | Au | -- | | -- |
| 141 | Cascade Lake | 55°10'N, 131°23'W | C | -- | Au | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 142 | -- | 55°09'N, 131°22'W | 0 | Vein; dissem | Cu,Pb,Zn | Qz lenses and veins up to 10 m wide and 30 m long in phyllite and metarhyolite locally contain small amounts of gn, sl, and ms(?). Metarhyolite contains small amounts of disseminated sl, cp, py, and gn | | V, DS |
| 143 | -- | 55°09'N, 131°22'W | 0 | Vein | Ag,Au,Cu, Pb,Zn | Qz veins less than 1 m wide in metarhyolite; reported in 1930's to assay up to 0.91 oz Ag per ton and 0.43 oz Au per ton, 0.85% Cu, 2.0% Pb, and 16.75% Zn | | V |
| 144 | Blunt Mountain | 55°08'N, 131°23'W | 0 | Vein | Pb | Sparse gn, hem(?), and py in Fe-stained qz veins and pods up to 3 m thick in schistose trondhjemite | | V |
| 145 | -- | 55°08'N, 131°22'W | P | Vein; dissem | Ag,Au,Cu, Pb | Qz veins 1 m or less wide in locally brecciated metarhyolite contain py, cp, and gn; Au and Ag also reported; cp and py also are disseminated in the metarhyolite. Assays of several veins in 1930's showed up to 0.05 oz Au and 20.60 oz Ag per ton, 4.63% Cu, 9.75% Pb, and 13.14% Zn. 33-m adit | | V, DS |
| 146 | -- | 55°07'N, 131°24'W | 0 | Vein; dissem | Ag,Au,ba, Cu,Pb | Qz and sulfide veinlets in limestone and(?) metarhyolite contain td, gn, and minor cp, cv, and cc. Barite stringers and stringers and disseminated grains of gn, py, and cp also occur in brecciated dolomitic limestone | | V, DS |

KETCHIKAN QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 147 | -- | 55°07'N, 131°26'W | D | Dissem | Cu | Disseminated cp in trondhjemite | | DS |
| 148 | Metlakatla | 55°08'N, 131°34'W | D | Dissem | Cu | Sparsely disseminated py and cp and traces of ml in schist | | DS |
| 149 | Yellow Hill | 55°06'N, 131°34'W | D | Vein; dissem | Asbestos, Cr, Pt | Partly serpentinized dunite containing scattered thin seams of chrysotile asbestos and sparse veinlets and disseminated grains of cr; random sample of massive dunite contained 0.029 ppm Pt | | MOS |
| 150 | Tamgas Harbor | 55°05'N, 131°32'W | D | Dissem | Cu | Sparsely disseminated py and cp in schist and hornfels | | DS |
| 151 | -- | 55°02'N, 131°39'W | D | Dissem | Cu | Thin stringers and streaks of py and cp in schist and gneiss | | DS |
| 152 | Sockeye | 55°03'N, 131°30'W | C | Lode | RA | -- | | -- |
| 153 | -- | 55°03'N, 131°21'W | D | Dissem | Au(?),Cu | Traces of cp, mo, py, and hem in sheared aplite and leucocratic qz monzonite | | DS |
| 154 | Cat Island | 55°01'N, 131°15'W | P | -- | Cu | Cp(?) and secondary Cu minerals in ultramafic rocks; 50 sacks Cu ore reportedly shipped in 1907 | | MOS |
| 155 | Ledge Point | 55°03'N, 131°12'W | C | Lode | Ag,Au | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| The locations of the following mineral occurrences are too general to show on plate 1: | | | | | | | | |
| | Cascade Inlet, eastern Annette Is. | 55°10'N, 131°24'W | P | Vein | Au | Qz veins along contact between graphitic schist and less deformed slaty shale contain py, td, and free Au | | V |
| | Dent Cove, western Gravina Is. | 55°17'N, 131°52'W | P | Dissem | Cu,Mo | Prospector's report in 1960's of disseminated cp and py, and traces of mo and secondary Cu minerals in sheared and altered metamorphic and intrusive rocks | | P(?) |
| | Nehenta Bay, southern Gravina Is. | 55°10'N, 131°47'W | P | Vein(?); dissem | ba,Cu | Zones of Fe-stained hydrothermally altered rock near Nehenta Bay contain copper minerals and barite | | V(?), DS |
| | Smugglers Cove, southern Cleveland Peninsula | 55°36'- 55°37'N, 131°57'-132°00'W | P | Vein(?) | Au(?) | Reports of work in Smugglers Cove area in early 1900's | | V(?) |
| | Coast Mountains east of Behm Canal | 55°46'N, 130°37'W | O | Dissem | Ag | 5 chip samples of locally pyritic, rusty-weathering paragneiss, representing 1.2 to 18 m of section each, along 0.8 km of strike length, contained 1-2 ppm Ag | | DS |

MOUNT FAIRWEATHER QUADRANGLE
(latitude 58°-59°N; longitude 136°-138°30'W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | 6/ BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1 | -- | 58°01'N, 136°32'W | C | Lode | Cu,Ni | -- | | -- |
| 2 | Surge Bay | 58°01'N, 136°21'W | P | Lode | Cu(?), Ni(?) | Area of gabbroic rocks. Claim located in 1923, presumably for Cu and Ni | | MOS |
| 3 | -- | 58°00'N, 136°21'W | C | Lode | Ni | -- | | -- |
| 4 | Yakobi Is. | 58°01'N, 136°20'W | M | Vein | Au,Cu | Cp-bearing auriferous qz vein in shear zone in mafic intrusive rock. About 55 oz Au reported to have been mined in early 1900's. 35-ft tunnel | | V |
| 5 | Miner Is. | 58°01'N, 136°21'W | P | -- | Au(?) | Au prospect in albite qz diorite | | V(?) |
| 6 | Marvitz | 58°07'N, 136°25'W | P | Vein | Au,Pb | Lenticular(?) qz veins up to 5 ft thick, and andesite dikes occupy closely-spaced joints in qz-sericite schist and slate. Veins carry free Au, py, aspy, and gn. 3 tunnels up to 210 ft long in early 1900's. No record of production | | V |

6/ Geologic descriptions of deposits in the Mt. Fairweather quadrangle are adapted mainly from summaries in one or more of the following general references: Berg and others (1981, p. 71-85), and Cobb (1972f, 1978e, and 1981a,b). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claim map for the quadrangle (U.S. Bureau of Mines, 1978f).

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 7 | -- | 58°07'N, 136°26'W | D | Placer | Au | Beach gravel at mouth of a small stream contains a little Au. Vein from which Au was derived probably crops out on cliff to west 800-1,000 ft above sea level | | Placer |
| 8 | Inian Is. | 58°14'N, 136°19'W | C | Lode | Fe | -- | | -- |
| 9,10 | Lemesurier Is. | 58°15'- 58°17'N, 136°04'-136°06'W | P | Vein | Asbestos, Cu, Mo | At loc. 9, gr-pyx hornfels at contact between marble and qz diorite contains mo and minor cp in small gash veins and disseminated in contact rock. Mo generally sparse, but small pockets form several percent of rock. 78 ft tunnel and a 25 ft crosscut; no record of production. At loc. 10, small veins in limestone contain qz, gr, ep, mo, cp, and bn. Paligorskite, an asbestos-like mineral, also occurs in the limestone. Two small deposits of this mineral were mined in early-mid 1900's | | V, S |
| 11 | -- | 58°16'N, 136°05'W | C | Lode | Mi | -- | | -- |
| 12 | Triangulation Station Garnet | 58°19'N, 136°50'W | D | Stain | Cu | Mi and az-stained graywacke and schist. Sample across 50 sq-ft Cu-stained zone contains 230 ppm Cu. Unaltered hostrocks also contain up to 230 ppm Cu | | -- |
| 13 | — | 58°21'N, 136°39'W | C | Lode | Mo | -- | | -- |

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 14 | Taylor Bay | 58°21'N, 136°37'W | M | Placer | Au | Very fine Au in outwash in front of Brady Glacier was mined for a short time in the early 1900's | | Placer |
| 15 | Fern Harbor claims | 58°18'N, 136°30'W | D | Veins | Cu | Qz-carbonate veins in greenstone. 1.1-ft-long channel sample across two narrow qz veins and a brecciated zone contained 160 ppm Cu | | V |
| 16 | Astrolabe Peninsula | 58°22'N, 136°54'W | D | Stratiform; dissem | Fe,Ti | Ilmenite and mag occur in layered gabbro stock. Float samples contained 8-22% mag and 2% il | | MOS |
| 17,18 | Brady Glacier (near snout) | 58°23'N, 136°37'W | D | Vein | Au,Cu,Mo | Qz veinlets in mafic gneiss and diorite locally carry traces of Au. Float samples of qz in area contain mo and traces of free Au, and fragments of qz in stream-sediment sample contain finely disseminated py and cp | | V |
| 19 | Dundas Bay (West Arm) | 58°25'N, 136°30'W | D | Dissem | Ag,Co,Cu | Cp and other sulfides(s) in hornblendite dikes in a gneissic dioritic rock. Grab samples of two small sulfide lenses yielded 18% Cu, 3 ppm Ag, and 700 ppm Co | | MOS |
| 20 | "Doc" Silver(?) | 58°23'N, 136°37'W | D | Vein | Ag,Au | Reported Au lode probably consists of small, Au-bearing qz veins in dioritic rock. A channel sample of 1.9 ft wide qz vein containing 0.4 ft gouge zone yielded 250 ppm Pb(AA), 5 ppm Ag (ss), and 0.275 oz Au/ton (fire assay) | | V |
| 21 | -- | 58°25'N, 136°28'W | C | Lode | Au | -- | | -- |

## MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 22,23 | Dundas Bay (east side) | 58°21'- 58°23'N, 136°16'-136°17'W | D | Vein; dissem | Au(?),Cu, Mo(?) | Deposit 22 consists of pods of py and minor cp, secondary Cu and Fe minerals, and a few qz veins in qz-rich metamorphic rocks in contact with metabasalt. Analyzed samples contained up to 2,000 ppm Cu and traces of Ag, Mo, and Pb. Deposit 23 is Cu-bearing qz veins 1-2 in. thick and about a ft apart in a cataclastic bt-qz diorite. A selected sample of the qz veins contained 1,000 ppm Cu and 300 ppm Mo. Unconfirmed lode Au occurrences in area | | V (22); V, P(?)(23) |
| 24 | East of Dundas Bay | 58°21'N, 136°10'W | D | Dissem | Fe | Reported Fe deposits probably occur in mag-rich skarn | | S(?) |
| 25 | Storm's Iron Prospect | 58°23'N, 136°15'W | D | Massive | Fe | Mag pods up to 30 ft wide, occur in a 500 ft long zone in limestone near an igneous contact. Some work in early 1900's | | S |
| 26 | Southwest of Alaska-Chief prospect | 58°26'N, 136°09'W | D | Vein | Zn | A grab sample of a 3-ft wide mineralized shear zone in granitic rock contained 1,500 ppm Zn, 300 ppm Pb, 70 ppm Cu, and 0.2 oz Ag per ton | | V |

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 27 | Alaska Chief | 58°27'N, 136°07'W | P | Massive | Ag,Au, Co(?),Cu, Zn | Massive sulfides (cp, py, po, and probably sl) in tactite, hornfels, and marble near contact of a granitic mass. Gangue is mainly calc with smaller amounts of qz. 40-ft adit driven in early 1900's. Chip samples in 1960's of stripped area contained as much as 15,000 ppm Cu, 700 ppm Zn, 300 ppm Co, 8 ppm Au (0.232 oz per ton), and 150 ppm Ag (4.377 oz per ton). Estimated indicated resource is 27,000 tons containing 1% Cu, 0.1 oz Au/ton, and 2 oz Ag/ton | | S |
| 28 | Palma River | 58°25'N, 137°01'W | O | Stain | Cu | Ml and az stain in amphibolite schist. Samples across amphibolite schist near Cu stain contained up to 220 ppm Cu | | DS(?) |
| 29 | De Langle Mt. | 58°24'N, 136°55'W | P | Stratiform | Fe,Ti | Mag-rich zones in layered gabbro stock; probably contain about 10% Fe; one layer 2 ft thick and 225 ft long said to contain about 64% Fe, 20% Ti, and 0.28% Ni | | MOS |
| 30 | Abyss Lake | 58°26'N, 136°37'W | O | Massive | Ag,Cu,Fe | Mag-gr lenses up to 30 ft long and 10 ft thick between marble and granite contain minor cp and py. Sample from one lens contained 1.5 ppm Ag | | S |
| 31 | Dundas River | 58°27'N, 136°23'W | P | Placer | Au | Small amount of placer Au mined from glacially derived gravels. | | Placer |
| 32 | South Wood Lake | 58°29'N, 136°29'W | O | Placer | Au(?) | -- | | Placer |

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 33 | Valley of Tears | 58°31'N, 136°22'W | P(?) | Placer | Au | Placer Au in reworked glacial deposits in the upper Dundas River drainage. USBM sampling in 1960's indicate average Au content of about 0.5-1.5 cents per cubic yard | | Placer |
| 34,35 | Mt. Marchainville | 58°28'N, 137°05'W | 0 | Stain; dissem(?) | Cu,Fe,Ti | Cu-stained gneiss outcrops; Fe-stained layers of gneiss(?) up to 50 ft thick contain 5-11% il | | MOS(?) |
| 36 | -- | 58°30'N, 137°03'W | 0 | Dissem | Cu,Ni | Lenses of disseminated Ni-bearing po in diorite. Largest lenses are 10 ft wide and 500 ft long. Analysis of float from lenses contains 0.83% Ni and 0.18% Cu | | MOS |
| 37,38 | -- | 58°30'N, 137°04'-137°05'W | 0 | Stratiform; dissem; vein(?) | Cu,Pb,Sn, Ti | At one site, samples of il-rich layered mafic stock contained up to 2.5% il and 0.1 to 1% Cu and 1-10% Pb. At another, samples contained 0.1 to 1% Cu; traces of Pb and Sn; and 1-10% Ti | | MOS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 39 | Brady Glacier | 58°33'N, 136°56'W | 0 | Strati-form(?): massive; vein; dissem | Co,Cu,Ni, Pt | Magmatic segregations of py, pent, and cp in layered mafic-ultramafic pluton. Deposit partly explored by private drilling. Overall average grade of deposit exposed on nunataks is probably less than 0.5% each of Ni and Cu. Sulfide masses contain 2-3% each of Ni, 1-1.21% Cu, and 0.25% Co. Indicated resource estimated to be 90-100 million tons containing 0.53% Ni and 0.33% Cu, plus an unknown amount of Pt-group metals. Analyses for Pt-group metals average: in massive sulfide 1.29 ppm; in gabbroic rocks with disseminated sulfide, 0.18 ppm; and in ultramafic rocks with disseminated sulfide, 0.23 ppm | Brew and others, 1978, p. C95-C101 | MOS |
| 40 | Threesome Mtn. | 58°32'N, 136°34'W | C,P | Vein; dissem(?) | Ag,Cu(?), Mo,W | Porphyry mo deposit in Tertiary granodiorite stock. Fracture coatings and fillings up to 0.2 ft thick contain qz, mo, and sc. Samples contained 2,000 or more ppm Mo, and as much as 7 ppm Ag, 330 ppm Cu, and 4,900 ppm W. Drilling in 1969 | | P |
| 41 | -- | 58°32'N, 136°31'W | 0 | Unknown | Mo | Rock sample collected in 1975 contained 700 ppm Mo | | -- |
| 42 | Wood Lake | 58°32'N, 136°29'W | M | Placer | Au | Placer Au has been mined from glacially derived gravels | | Placer |
| 43 | West of Blackthorn Peak | 58°34'N, 136°35'W | 0 | Unknown | Fe | Magnetic anomaly reported by USGS about 6 mi northwest of Blackthorn Peak | | MOS(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 44 | Geikie Inlet | 58°35'N, 136°32'W | D | Vein | Mo | Molybdenite in tactite reported before 1930 | | S |
| 45 | Geikie Inlet | 58°35'N, 136°30'W | P | Disem(?) | Au,Cr | Cr occurs in blebs in lamprophyre dikes in diorite near a dunite body. Chip sample from lamprophyre dike contained 0.10 ppm Au | | MOS |
| 46 | -- | 58°36'N, 136°32'W | C | Lode | Ni | -- | | -- |
| 47 | -- | 58°35'N, 136°34'W | P(?) | Vein | Mo(?), Ni(?) | Four Mo(?) claims were staked on Blackthorn Peak in 1958; claims originally staked for Ni | | P(?) |
| 48 | Deleted | | | | | | | |
| 49 | Willoughby Is. | 58°36'N, 136°08'W | P | Vein(?) | Ag,Au,Cu, Pb,Sb | Vein(?) at the intersection of two lamprophyric dikes contains cp, py, td, and jamesonite(?); some Ag ore reported to have been mined. Sample contained 25% Pb, 25% Sb, and 1.74 oz Au and 42 oz Ag per ton | | V(?) |
| 50 | Willoughby Is. | 58°36'N, 136°07'W | P(?) | Vein(?) | Cu | Replacement vein(?) of py, lo, and cp in limestone(?) | | V(?) |
| 51 | Willoughby Is. | 58°36'N, 136°06'W | C | Lode | Au,Pb,Sb | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 52 | Francis Is. | 58°38'N, 136°11'W | P | Vein(?); dissem(?) | Ag,Au,Cu, Zn(?) | Marble intruded by qz diorite. Silicified fault zone as much as 10 ft wide along contact between qz diorite and tactite contains irregularly distributed cp, bn, ml, sl(?), td(?), cc(?), pyr(?), and py. Samples from fault zone contained as much as 7,000 ppm Cu; 1,000 ppm Zn; 200 ppm Sb; 150 ppm Bi; and 1.46 oz (50 ppm) Ag per ton. Au- and Ag bearing bn reported in early 1900's | | S |
| 53 | South Marble Is. | 58°39'N, 136°03'W | O | Vein; dissem(?) | Cu | Small pods(?) of py, po, cp, and cv in marble near porphyritic dikes and in joints in the dikes | | V, S(?) |
| 54 | North Marble Is. | 58°40'N, 136°04'W | O | Massive(?); vein | Cu,Fe,Zn | Pods of py, po, cp, cv, sl, and mag as much as 1.5 ft thick and 15 ft long in marble, near lamprophyre dikes, and in joints in dikes | | V, S(?) |
| 55 | Shag Cove | 58°39'N, 136°21'W | O | Vein; massive(?) | Ag,Co(?), Cu | Po, py, cp, az, and cu(?) in pods in sheared and altered zone in quartzose rocks. Sample from largest (3 ft long, 1/2 ft thick) pod contained 3,000 ppm Cu, 700 ppm Zn, 200 ppm Co, and a trace of Ag | | V |
| 56 | North Shore of Geikie Inlet | 58°40'N, 136°23'W | O | Dissem(?) | Cu,Mo | Sulfide-bearing greenschist. Grab sample contained 10 ppm Mo and 150 ppm Cu | | DS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 57 | Charpentier Inlet | 58°40'N, 136°26'W | D | Dissem(?) | Au,Cu,Mo | Altered zone about 50 ft wide occurs in fine-grained diorite. A chip sample across richest section of zone contained a trace of Au, 150 ppm Cu, 7 ppm Mo, and 1% Ti | | P(?) |
| 58 | Fourth of July Mtn. | 58°39'N, 136°43'W | D | Dissem(?) | Ag,Cu,Mo | Traces of cp in gossans in sericitized and chloritized granitic(?) host rock. Two composite grab samples of float and a third from material in place contain 130-160 ppm Cu, nil to 20 ppm Mo, and 0.5 to 2 ppm Ag | | P(?) |
| 59 | South Crillon Glacier | 58°38'N, 137°19'W | D | Dissem(?) | Au,Co,Cr, Cu,Fe,Ni, Ti | Fe-stained shear zones as much as 20 ft thick in il-bearing layered gabbro near basal contact with amphibolite schist. One 6-8 ft thick zone contained a small pod of po, cp, and pent; sample contained 3,000 ppm Cu, 2,500 ppm Ni, and 700 ppm Co. Rest of zone carries disseminated sulfides and as much as 0.10 ppm Au | | MOS |
| 60 | North Crillon Glacier | 58°39'N, 137°19'W | D | Stratiform: massive(?); dissem; vein | Cr,Cu,Fe, Pt,Ti | A Fe- and locally Cu-stained layer approximately 5 ft thick in mafic pluton extends for several thousand feet along south wall of valley and contains as much as 60% ilmenite, and 2-3% po and cp. Chip samples of an accessible shear zone with po, cp, and il contained as much as 980 ppm Cu, 3,000 ppm Ni, and 0.70 ppm Pt. Cr reported in float nearby | | MOS |
| 61 | do | 58°41'N, 137°17'W | D | do | Cr,Cu,Fe, Ti | | | |
| 62 | do | 58°42'N, 137°16'W | D | do | do | | | |

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 63 | -- | 58°40'N, 137°17'W | D | Stratiform: massive(?); dissem; vein | Tl | Fe-stained zone in gabbro stock. Grab sample of Fe-stained rock contained more than 1% Tl | | MOS |
| 64 | Mt. Orville | 58°43'N, 137°16'W | D | Dissem(?) | Mo(?) | Prominent Fe-stained zone. Unverified report (1976) of mo | | P(?) |
| 65 | North Crillon Glacier | 58°38'N, 137°26'W | D | Stain (float) | Cu | Ml and az in Cu stain on amphibolite schist float in glacial moraine. Large blocks of Cu-stained material found for at least 1,000 ft | | DS(?) |
| 66 | -- | 58°40'N, 137°26'W | D | Dissem(?) | Ag,Au,Cu | Large area of Fe-stained amphibolite schist that contains up to 240 ppm Cu. Sample across sulfide-bearing seam 10 ft long and up to 0.4 ft wide contained 800 ppm Cu, 0.15 ppm Au and 7 ppm Ag | | DS(?) |
| 67 | Fall Creek | 58°37'N, 137°30'W | D | Dissem | Ag,Au,Mo, W | Yellow- and red-stained hydrothermally altered zones in sedimentary and volcanic rocks. Channel sample taken across a jasper-rich zone in py- and pow-bearing greenstone assayed 0.02 oz Ag per ton. A sample of an altered zone near Upper Coal Creek contained 0.24 oz Au per ton and 0.02 oz Ag per ton | | DS |

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 68 | Lituya Bay area | 58°38'N, 137°29'W | D | Vein; dissem(?) | Au | (68) Numerous rusty-weathering hydrothermally altered zones in Tertiary volcanic and sedimentary rocks; some zones contain Au, best assay is 0.24 oz Au per ton | Mertie, 1933, p. 133-135; Rossman, 1957; MacKevett and others, 1971, p. 53, 64, 67-69 | V (68) |
| 69 | do | 58°39'N, 137°29'W | P(?) | Dissem(?) | Cu | (69) Gabbro dike exposed on shore of SE arm of bay contains irregular veinlets and blebs of po and cp | | MOS (69) |
| 70 | do | 58°40'-58°47'N, 137°41'-137°55'W | M | Placer | Au,Pt; Fe | (70, 71) Au, Pt, and other heavy minerals in thin and patchy placer deposits on modern and old raised beaches; heavy minerals are gr, mag, il, Au, and Pt. Source of heavy minerals is layered mafic and ultramafic plutons in Fairweather Range. Mining 1867-1940 produced about 4,000 fine oz of Au. Placers also are potential resource of Ti and Fe | | Placer (70,71) |
| 71 | do | 58°32'-58°35'N, 137°25'-137°35'W | M | Placer | Au,Pt; Fe, Ti | | | |
| 72 | Oregon King Consolidated | 58°30'N, 137°23'W | P | Placer | Au | Intermittent exploration of beach and probably stream and terrace deposits in early 1960's | | Placer |
| 73 | -- | 58°25'- 58°27'N, 137°09'-137°14'W | C | Placer | Fe | Beach placer claims | | Placer |
| 74 | Desolation Valley | 58°45'N, 137°35'W | O(?) | Stain, dissem | Unknown | 40 ft x 150 ft Fe-stained area in hornblende gneiss containing disseminated po. Random composite chip sample of stained area contained no significant metal values | | OS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 75 | North Side of Desolation Glacier | 58°47'N, 137°34'W | O | Dissem | Au,Cu,Ni, Tl(?) | Disseminated Ni-bearing po, py, and cp in mafic dike 5-6 ft wide and exposed for about 200 ft. Analysis indicates average grade is 0.59% Ni, and 0.62% Cu, 0.01 oz Au per ton, and an estimated 2-5% Tl | | MOS |
| 76 | Contact Munatak | 58°43'N, 136°47'W | O | Dissem | Au,Mo | Py and po occur as disseminations in hornfels and limestone near a contact with granodiorite. Chip sample taken for 6.0 ft across Fe-stained hornfels contained 0.20 ppm Au, 5,000 ppm As and 10 ppm Mo; chip sample across limestone with py contained 0.10 ppm Au, 10,000 ppm As and 20 ppm Mo | | P(?), S(?) |
| 77 | Gilbert Is. | 58°47'N, 136°34'W | P | Vein | Ag,Au,Cu, Mo,Pb,Zn | Qz veinlet stockworks in bleached and altered qz diorite contain small amounts of cp and mo. Selected specimen contained 7,000 ppm Cu; 2,000 ppm Mo; and 0.292 oz Ag per ton. Also reported are td, gn, sl, py and free Au | | V, P(?) |
| 78 | Unnamed Is. | 58°46'N, 136°33'W | P | Vein | Cu,Mo | | | V, P(?) |
| 79 | Blue Mouse Cove | 58°48'N, 136°30'W | O | Vein | Ag,Au,Pb, Zn | Qz vein about one ft thick in 4-ft wide shear zone in granitic rocks contains td, py, and Au. A chip sample across the richest 2.5 ft of the 4 ft zone yielded 680 ppm Zn, 220 ppm Pb, 7 ppm Ag, and 300 ppm As | | V |
| 80 | Tidal Inlet | 58°48'N, 136°21'W | P | Vein | Co,Cu,Ni | Sample of py-,cp-,and po(?)-bearing qz veins in marble near contact with diorite carried 1,000 ppm Cu, 200 ppm Ni, and 300 ppm Co | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 81 | Southwest of the head of Lamplugh Glacier | 58°47'N, 136°54'W | D | Dissem | Au,Cu,Mo, Ni | Fe-stained altered zone in hornfels near contact with sheared adamellite and andesite. Disseminated py occurs in stained zone which is at least 40 ft wide and 150 ft long. Grab sample of best-appearing material in stained zone contained trace Au, 150 ppm Cu, 150 ppm Co, 200 ppm Cr, 20 ppm Mo, and 300 ppm Ni | | P(?) |
| 82 | Lamplugh Glacier | 58°49'N, 136°55'W | D | Vein; dissem | Ag,Au,Co, Cu,Mo,Ni | Fe- and Cu-stains adjacent to nearly vertical pyrite-bearing qz-veins as much as 10 in. thick in hornfels intruded by metadiorite; abundant py throughout stained zone, occurring as disseminations and in massive stringers and lenses up to 5 ft wide. Chip samples of stained zone contained 230 ppm Cu, 0.5 ppm Ag, 0.20 ppm and 0.25 ppm Au, and 10 ppm Mo | | P(?) |
| 83 | South end of the Parker Nunatak | 58°48'N, 136°40'W | D | Vein; dissem | Au,Mo | Fe-stained altered zones in metamorphic rocks near contact with granodiorite. Small pods of massive py a few tenths of a foot long in altered zones. Chip samples of Fe-stained zones contained trace Au and up to 10 ppm Mo | | P(?) |
| 84 | East of the head of Reid Glacier | 58°47'N, 136°46'W | D | Vein; dissem | Ag,Au,Cu | Up to 3-ft thick bands of py, aspy, and cp in Fe-stained ep-gr skarn. Samples of sulfide and Fe-stained material contained up to 0.15 ppm Au, 1.5 ppm Ag, and 1,100 ppm Cu | | S |

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 85 | -- | 58°48'N, 136°45'W | Q | Dissem(?) | Au,Mo | Py occurs in a 7 ft wide Fe-stained zone in hornfels and marble. Chip sample of zone contained a trace of Au and 5 ppm Mo | | S(?) |
| 86 | East of Reid Glacier | 58°49'N, 136°46'W | Q | Vein | Au,Cu | Fe-stained zones and 1-2 ft thick qz veins containing small amounts of sulfides occur in marble and other metamorphic rocks. Select grab sample from altered zones contained a trace of Au and 300 ppm Cu. Qz vein sample contained a trace of Au and 1,000 ppm Cu | | V |
| 87 | Gilbert Is. | 58°49'N, 136°36'W | P | Vein | Mo | Qz veinlets and enclosing qz diorite contain dissem Mo | | V, P(?) |
| 88 | Gilbert Is. | 58°50'N, 136°36'W | Q | Dissem(?) | Cu(?),W | One ft wide tactite zone occurs in marble. Select grab sample contained 150 ppm Cu, and 150 ppm W | | S |
| 89 | Adams Inlet | 58°51'N, 136°03'W | P | Vein | Mo | Molybdenite reported on fracture surfaces in metamorphic rocks near granitic contact | | V, S(?) |
| 90 | Mt. Copper | 58°51'N, 136°59'W | Q | Dissem(?) | Au,ba,Cu, Mo,Zn | Fe-stained pyritic hornfels. Grab samples contained 15,000 ppm Ba, 300 ppm Cu, 15 ppm Mo, 300 ppm Zn, and 0.10 ppm Au | | S(?) |
| 91 | Rambler | 58°50'N, 136°53'W | P | Vein | Ag,Au,ba, Pb,Zn | Up to 3-ft thick qz-calc veins in granodiorite, metamorphic rocks and mafic dikes contain ba, aspy, py, gn, and traces of Au. Assays of 6.45 oz Au and 1.72 oz Ag per ton reported. Surface exploration in 1930's | Rossman, 1959a, p. 35-38, 55; Brew and others, 1978, p. C210, C230-C233 | V, P(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 92 | Highland Chief | 58°51'N, 136°51'W | P | Vein | Ag,Au,Pb | Up to 2-ft thick qz veins in marble, schist, and granodiorite contain free Au, aspy, and gn. One sample assayed 3.49 oz Au and 1.25 oz Ag per ton. Prospect is snow covered for much of year | MacKevett and others, 1971, p. 63-64; Brew and others, 1978, p. C222-C230 | V |
| 93 | Galena | 58°51'N, 136°50'W | M(?) | Vein | Ag(?), Au(?), Pb, Zn | Vuggy qz vein 4-18 in. thick in granodiorite contains py, sl, and gn. Assays show 0.16 oz Au and 0.30 oz Ag per ton, and 0.79% Zn. About 30 tons of ore reported to have been mined in 1939 | | V |
| 94 | Whirlaway | 58°51'N, 136°47'W | M | Vein | Au | Vertical qz-calc veins as much as 1 ft thick in diorite contain sparse py and aspy. Weathered surface material has been mined and sluiced, free Au recovered | | V |
| 94 | -- | 58°51'N, 136°47'W | O | Vein | Au,W(?) | Au- and sc(?)-bearing qz(?) vein in shattered metasedimentary rock | | V |
| 94 | Hopalong | 58°51'N, 136°47'W | M | Vein | Au | Vertical qz-calc veins up to 1 ft in diorite contain sparse py and aspy and probably Au. Minor production of Au reported in early(?) 1900's of Au from weathered parts of vein | | V |
| 95 | Sunrise | 58°51'N, 136°48'W | P | Vein; massive(?) | Ag,Au,Cu, W(?) | Small pods of cp and po in altered zones in marble and hornfels cut by lamprophyre dikes. Small qz vein contains py and small amounts of Au and Ag. Unconfirmed report of sc | | V |

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 96 | Incas | 58°52'N, 136°50'W | M | Vein | Au | Lenticular qz fissure veins in hydrothermally altered granodiorite contain aspy and Au. About 200 ft of underground workings; probably small production, mainly from weathered veins in early 1900's. Altered granodiorite contains traces of Au and sulfides | Rossman, 1959a, p. 37-39 | V |
| 97 | Monarch | 58°52'N, 136°51'W | M | Vein | Au,Pb | Qz fissure veinlets and lenses of in altered granodiorite contain aspy, py, gn, and free Au. Adits 210 and 120 ft long, short drifts and a small stope. Unknown amount of ore, mainly weathered material from surface, produced in early 1900's | Rossman, 1959a, p. 48-52; MacKevett and others, 1971, p. 60-62 | V |
| 98 | Ptarmigan Creek | 58°52'N, 136°52'W | 0 | Vein | Zn | Lenticular qz fissure vein in granodiorite(?) contains sl, aspy, and py | Brew and others, 1978, p. C242-C245 | V |
| 99 | LeRoy | 58°53'N, 136°53'W | M | Vein | Ag,Au,Cd, Cu,Pb,Zn | Qz-calc-feldspar fissure veins in metamorphic screen in granitic rocks contain aspy, py, gn, sl, cp, Au, and Ag. Au occurs mainly in narrow altered zones along veins. Samples contained as much as 10.34 oz Au and 7.40 oz Ag per ton; 1,000 ppm Cd; 70 ppm Cu; 1,500 ppm Pb; and 15,000 ppm Zn. Total production in mid-1900's about $100,000 (2,857 fine oz) in Au. Adits and stopes | Twenhofel and others, 1949, p. 32-34; Rossman, 1959a, p. 38-39; MacKevett and others, 1971, p. 55-59 | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 100 | Parker, A. F. | 58°53'N, 136°54'W | M | Vein | Ag,Au,Pb | Qz veinlets 1/2 to 1 in. thick in 10 in. of gouge in a fault zone in granodiorite contain gn, py, and free Au. One sample of crushed qz contained 5.13 oz Au and 1.55 oz Ag per ton. 7-8 tons of ore mined in early 1940's | Twenhofel and others, 1949, p. 33-34; Brew and others, 1978, p. C232, C234-C236 | V |
| 101 | Richtmeyer | 58°53'N, 136°56'W | P(?) | Vein(?) | Au(?) | Probably auriferous(?) qz veins in granitic rock near contact with hornfels | | V(?) |
| 102 | Rainbow | 58°53'N, 136°51'W | M | Vein; dissem(?) | Ag,Au,Pb, Zn | Steeply-dipping qz-calc fissure vein or fault breccia in altered granodiorite and alaskite. Ore mined from brecciated vein material that contains Au and a mineral assemblage similar to that at LeRoy mine (no. 99). Altered rock along fault also contains a little Au. Samples contained as much as 10.2 oz Au and 2.04 oz Ag per ton; 1,500 ppm As; 500 ppm Pb; and 2,000 ppm Zn. Adit, crosscut, stopes. Mine worked in 1940's; no production figures | Twenhofel and others, 1949, p. 31, 33-34; Rossman, 1959a, p. 37-39, 52-54; MacKevett and others, 1971, p. 59-60 | V |
| 103 | Sentinel | 58°52'N, 136°50'W | M | Vein; dissem | Au,Pb | Steep one-ft-thick hydrothermally altered zone in granodiorite contains qz(?), sparse gn and other sulfides, and Au. An unknown, but small amount of Au was recovered from decomposed material in 1930's | | V |

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 104 | East of Kashoto Glacier | 58°52'N, 137°02'W | 0 | Dissem | Au,Cu | Py occurs as disseminated grains in biotite hornfels near a contact with granodiorite; altered zone is several hundred ft thick and Fe-stained. Two composite grab samples contained 300 to 700 ppm Cu and a trace of Au | | DS, S(?) |
| 105 | East of Kashoto Glacier | 58°53'N, 137°02'W | 0 | Dissem | Ag,Au,Cu | Py, po, and sparse bn occur as disseminations in greenstone near contact with granodiorite. Two chip samples contained up to 0.10 ppm Au, 190 ppm Cu, and 1 ppm Ag | | DS |
| 106 | South side John Hopkins Inlet | 58°53'N, 137°01'W | 0 | Float | Ag,Cu,Sn | Hornfels float containing qz and cp; sample contained 410 ppm Cu, 20 ppm Sn, and a trace of Ag | | -- |
| 107 | Northwest shore John Hopkins Inlet | 58°53'N, 137°04'W | 0 | Dissem | Ag,Au,Cu, Zn | 0.3-ft wide shear zone in Fe-stained hornfels contains finely disseminated py and Cu minerals. Chip sample across zone contained 110 ppm Cu, 130 ppm Zn, trace Au, and 0.7 ppm Ag. A grab sample from stained zone contained 300 ppm Zn | | DS |
| 108 | South side John Hopkins Inlet | 58°54'N, 137°01'W | 0 | Float | Ag,Au,Cu, Sn,W,Zn | Hornafels(?) float containing po and cp contain 4,100 ppm Cu, 250 ppm Zn, and 0.15 ppm Au, 7 ppm Ag, 700 ppm Sn, and 790 ppm W | | -- |
| 109 | do | 58°54'N, 136°59'W | 0 | Float | Ag,Cu | Sulfides in hornfels float; sample contained 4,600 ppm Cu, 7 ppm Ag, and 300 ppm Co | | -- |

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 110 | do | 58°54'N, 136°59'W | O | Stain | Cu,Mo | Altered granitic rocks are coated by secondary Cu and Fe minerals. Grab sample from altered zone contained 1,500 ppm Cu, and 30 ppm Mo | | P(?) |
| 111 | Orange Point | 58°55'N, 137°00'W | O | Massive, dissem | Ag,Au,Cu, Mo,Pb,Zn | Stratabound volcanogenic massive sulfide deposit in metamorphosed Permian(?) andesitic flows and tuff. Deposit consists of elongate zones of massive and disseminated sulfides up to 80 ft wide and 560 ft long. Ore minerals include py, po, sl, and cp. USBM investigations indicate that deposit contains more than 1 million tons of inferred resources containing up to 19% Zn, 5.2% Cu, 0.5% Ba, 1,600 ppm Pb, 100 ppm Mo, 3.5 ppm Au, and 70 ppm Ag | Brew and others, 1978, p. C129-C147 | VM |
| 112 | North side John Hopkins Inlet at entrance | 58°55'N, 136°56'W | O | Vein | Ag,Au,Cu, Pb,Zn | Sulfides in lenticular carbonate-qz vein up to 3.5 ft thick in gneiss. Chip sample contained 770 ppm Cu, 250 ppm Pb, 4,300 ppm Zn, 0.03 ppm Au, and 15 ppm : g | | V |
| 113 | Russell Is. | 58°56'N, 136°49'W | O | Vein | Au | Two py-bearing auriferous qz-calc veins 2-5 in. thick in vertical altered zone 3 ft thick in granodiorite. Sample contained 0.844 oz Au per ton and traces of Ag and Pb | | V |
| 114 | Rendu Inlet | 58°56'N, 136°42'W | P | Vein; dissem | Cu,Mo | Qz and qz-pegmatite stringers in granitic rocks contain scattered mo, cp, py, and po | MacKevett and others, 1971, p. 50, 69-70, 73-79; Brew and others, 1978, p. C187-C188, C190-C191 | P(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 115 | do | 58°56'N, 136°39'W | P | Vein; dissem | Ag,Cu | Several iron-stained altered zones as much as 20 ft long and 1 ft thick in bleached marble contain scattered py and possibly other sulfide minerals. A sample from one of the altered zones contained 1,500 ppm Cu, 1,000 ppm Ni, and 700 ppm Co | do | V, DS |
| 116 | do | 58°55'N, 136°39'W, | P | Vein | Fe | Pods of mag-rich skarn in qz diorite and near its contact with marble | do | S |
| 117 | do | 58°55'N, 136°38'W | P | Dissem | Co,Cu,Ni | Scattered sulfides in bleached marble; principal sulfide is py; sample contained 1,500 ppm Cu, 1,000 ppm Ni, and 700 ppm Co | do | DS |
| 118 | Queen Inlet | 58°54'N, 136°31'W | O | Vein | Co,Cu,Fe, Sn | Small tactite and mag skarn bodies up to 20 ft thick along contacts between alaskite, porphyritic volcanic rocks, and marble. Skarn and mafic dikes that cut alaskite and marble contain veins and pods of py, cp, and secondary Cu minerals. SS analyses of skarn and sulfide samples showed as much as 300 ppm Cu, 300 ppm Co, and 30 ppm Sn | MacKevett and others, 1971, p. 70, 72-73 | S |
| 119 | Mt. Merriam area | 58°54'N, 136°26'W | O | Massive; dissem | Cu,Fe | Zones of tactite in carbonate host rocks. Mag-rich pods assayed more than 20% Fe and up to 0.28% Cu | Brew and others, 1978, p. p. C345-C347 | S |

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 120 | Mt. Fair-weather | 58°54'N, 136°35'W | D | Stratiform (float) | Cr,Cu,Ni, Pt | Float specimens of material from layered mafic and ultramafic pluton contained cp, cubanite, po, pent, cr, mag, il, Pt-group metals, and as much as 200 ppm Co | Plafker and MacKevett, 1970, p. B21-B26 | MOS |
| 121 | 3850 nunatak | 58°57'N, 136°59'W | D | Massive | Ag,Cu,Zn | Pods of massive sulfides up to 1/2 ft across in skarn between granitic and calcareous bedded rocks contain py, po, and cp. Chip samples of sulfide pods contain up to 770 ppm Cu, 190 ppm Zn and 1.5 ppm Ag | | S |
| 122 | Tarr Inlet | 58°58'N, 136°56'W | D | Vein; dissem | Ag,Cu,Zn | Siliceous lenses in locally altered leucocratic granitic rocks contain disseminations and veinlets of py and subordinate cp. Sample from one lens contained 1,000 ppm Cu, 300 ppm Zn, and a trace of Ag | MacKevett and others, 1971, p. 40-41, 51; Brew and others, 1978, p. C190 | P(?) |
| 123 | Tarr Inlet | 58°59'N, 137°00'W | D | Vein | Cu | Qz-calc veinlets in pegmatitic diorite contain cp, py, and secondary Cu minerals. Sample contained 2,000 ppm Cu. | do | V |
| 124 | 3087 nunatak | 58°59'N, 137°01'W | D | Massive | Cu | Massive sulfide lenses up to 2 ft wide and 6 ft long similar in appearance to those at Orange Point (no. 111) are in volcanic rock near a 3087-ft high nunatak | | VM(?) |
| 125 | South of Margerie Glacier | 58°59'N, 137°03'W | D | Vein(?) | -- | Shear zone in bedded and intrusive rocks contains massive py and up to 3% disseminated(?) py | | V(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 126 | Silver Dick and Little Jennie | 58°57'N, 136°40'W | P | Vein | Ag,Cu(?) | Ankeritic qz vein about 6 in. thick along contact between dioritic dike and marble contains td and wire Ag | | V |
| 127 | Triangle Is. | 58°57'N, 136°32'W | P | Vein(?); dissem(?) | Mo | A few hundred lbs of mo-bearing rock were removed from deposit in granodiorite cut by aplitic dikes | | P(?) |
| 128 | Wachusett Inlet | 58°55'N, 136°14'W | O | Vein | Ag,Cu,Mo, Zn | Qz vein 1-12 in. thick in granitic rock contains py, mo, and cp. Sample collected by USBM over 0.7 ft contained as much as 74,000 ppm Cu, 1,500 ppm Mo, and 30 ppm Ag; inferred resource of 800 tons containing 0.44% Cu, 0.005% Mo, and 0.034 oz Ag per ton over a 4-ft mining width. Richest part of vein also contained 700 ppm Zn | Brew and others, 1978, p. C307-C310 | V |
| 129 | Curtis Hills | 58°56'N, 136°13'W | O | Vein | Ag,Cu,Pb | Fe-stained altered zones 1-2 ft wide along contacts of hornfels and mafic dikes contain qz and qz-calc veins up to 0.5 ft wide. Samples of veins contained up to 15 ppm Ag, 380 ppm Pb, and 500 ppm Cu. Samples of stained zones showed up to 700 ppm Cu, 150 ppm Ni, 30 ppm Cr, and 1% Ti | | V |
| 129a | Bruce Hills | 58°57'N, 136°14'W | O | Unknown | Cu,Mo | "Cu deposit containing significant amounts of mo" | MacKevett, 1971, p. 73, 74, 79 | -- |
| 130 | -- | 58°57'N, 136°12'W | C | Lode | Mo | -- | | -- |

MOUNT FAIRWEATHER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 131 | Red Mtn. | 58°58'N, 136°03'W | D | Vein; dissem | Ag,Cd,Pb, Zn | Small pyrite-rich pods and disseminations in limestone near a granodiorite cupola. Largest pod is about 10 ft long and 1 ft in diameter; encrusted with a secondary Zn mineral (probably hydrozincite or smithsonite). A sample contained 7,000 ppm Zn, 500 ppm Pb, 700 ppm Cd, and a trace of Ag | | V, DS, S(?) |
| 132 | -- | 58°59'N, 136°05'W | C | Lode | Cu,Fe,Mo | -- | | -- |
| 133 | Nunatak | 58°59'N, 136°06'W | P | Dissem; vein | Ag,Au,Cu, Mo | Vein, skarn and Mo porphyry deposits. Stockwork of qz veins, mainly in hornfels around a qz monzonite porphyry stock intruded into metasedimentary rocks, but also in the qz monzonite porphyry and in a silicified skarn zone near edge of stock. Deposits contain varying amounts of mo, py, po, cp, td, bn, and en. USGS resource estimate in 1960's for stockwork above sea level near Muir Inlet = 2,247,000 tons averaging 0.067 $MoS_2$ and 0.016% Cu; remainder of stockwork and fault-zone deposit = 129,530,250 tons averaging 0.026% $MoS_2$ and 0.018% Cu. Additional 18,000,000 tons of similar material under steep cliffs at south end of stockwork. Assays in early or mid-1900's showed 0.04 oz Au and 7.07 oz Ag per ton | Twenhofel and others, 1946, p. 9-18; MacKevett and others, 1971, p. 1-2; Brew and others, 1978, p. A8-A9, C274-C295, D17-D20 | V, S, P |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 134 | Bruce Hills | 58°59'N, 136°21'W | D | Vein; dissem | Ag,Cu,Mo, Pb,Zn | Py, po, cp, mo, ml, and minor amounts of md, sl, and gn occur in thin qz veins, as disseminated particles, and as fracture coatings in granodiorite and hornfels near a steeply-dipping fault zone. Samples contained as much as 3 ppm Ag | MacKevett and others, 1971, p. 48-50; Brew and others, 1978, p. C295-C307 | V,P(?) |
| 135 | North of Icy Strait | 58°22'N, 136°09'W | C | Lode | Au | -- | | -- |
| 136 | West of Mt. Dagalet | 58°35'N, 137 14'W | D | Stain | Ml(?) | Fe-stained mafic(?) intrusive rocks | | MOS(?) |
| 137 | West of Mt. Dagalet | 58°36'N, 137°16'W | D | Dissem(?) | Fe,Ti | Contact zone of gabbro(?) stock probably contains 10-25% il | | MOS |
| The following occurrence is not shown on the map: | | | | | | | | |
| | Dundas Bay, East Arm | 58°28'N, 136°34'W | D | Dissem(?); float | Au,Mo | Pow-bearing skarn in marble inclusion in Cretaceous diorite at a contact with Tertiary granite. Chip sample across contact zone contained 0.10 ppm Au | Brew and others, 1978, p. C257-C263 | S |

PETERSBURG QUADRANGLE
(latitude 56°-57°N; longitude 132°-134°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | 7/ BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1 | Port Camden | 56°48'19"N, 133°56'32"W | D | Stratiform; dissem | U | Traces of U in carbonized plant-bearing dolomitic sandstone in the Kootznahoo Fm., a non-marine, lacustrine, or shallow marine formation of early or mid-Tertiary age. Radioactivity readings range from 2-50 times background. Deposit prospected intermittently since about 1976 | Eakins, 1974, p. 39-44; Dickinson, 1979a | SU |
| 2 | Northern Copper Co. (Kupreanof Mtn.) | 56°54'N, 133°22'W | P(?) | Massive; dissem | Ag,Au,Cu, Zn | Deposit is in tabular body of pyroxene "granulite" that contains sparse inclusions or xenoliths of marble and is structurally conformable with greenschist, phyllite, and marble. Granulite contains disseminated po, mag, cp, and small amounts of sl and py; near base of body, these metallic minerals also form massive pods and lenses. Low values in Au and Ag. Explored in early 1900's by several hundred ft of underground workings, and in 1970's by private drilling. No known production | | S(?), MS(?) |

7/ Geologic descriptions of deposits in the Petersburg quadrangle are adapted mainly from summaries in one or more of the following general references: Berg and others (1981, p. 86-93); Cobb (1972g and 1978f); and Grybeck and others (1984). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claim map for the quadrangle (U.S. Bureau of Mines, 1978g)

PETERSBURG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 3 | Portage Mtn. | 56°51'N, 133°15'W | P | Dissem; vein | Ag,Au,Cu, Pt | Thin qz-calc veins in slate, greenstone, diorite, and diabase contain cp, py, mag, and low values in Ag and Au. Schist inclusion(?) in gneissic diorite contains about 0.4 oz Au, 2 oz Ag, and 0.0006 oz Pt per ton; a little Cu; and possibly a trace of Ir. Surface prospecting in early 1900's | | V, DS |
| 4 | Taylor Creek | 56°48'N, 133°22'W | P | Dissem; vein(?) | Ag,Cu,Pb, Zn | Disseminations and small masses of py, gn, sl, and cp in brecciated dolomitic limestone. Surface exploration in early 1900's. Samples collected in about 1950 by USBM contained up to 0.95% Pb, 4.3% Zn, and 1.2 oz Ag and less than 0.005 oz Au per ton | Kerns, 1950 | DS, V(?) |
| 5 | Kane Peak | 56°59'- 57°00'N, 133°05'-133°07'W | D | Dissem | Cu,Ni | Dunite-pyroxenite body locally contains a few percent disseminated py, pent, and cp | Kennedy and Walton, 1946, p. 78-80; Walton, 1951, p. 208-226 | MOS |
| 6 | -- | 56°59'N, 133°04'W | C | Lode | Fe | -- | | MOS |
| 7 | -- | 56°50'N, 133°02'W | C | Lode | RA | -- | | -- |
| 8 | -- | 56°50'N, 133°01'W | C | Lode | Ag,Au,Fe | -- | | -- |
| 9 | Thomas Bay | 56°59'N, 132°47'W | P | Vein; dissem | Ag,Au,Cu, Pb | Qz vein in 12-ft wide zone of silicified and pyritic schist contains py, aspy, and minor cp, po, and argentiferous gn. Short tunnel in early 1900's. No known production | | V |

PETERSBURG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 10 | -- | 56°43'N, 132°46'W | C | Lode | Au | -- | | -- |
| 11 | Castle Is. | 56°39'N, 133°10'W | M | Massive; dissem | Ag,Au,ba, Pb,Zn | Stratiform massive ba deposit in Upper Triassic sedimentary and volcanic rocks. Ba was accompanied by traces of sl, gn, py, po, bn, td-tn, and cp. About 850,000 tons of ba was mined from 1963-1980. Average grade of ore was about 90% $BaSO_4$. Mine now closed and dismantled | Burchard, 1914, p. 109-113; Buddington and Chapin, 1929, p. 318 | MS |
| 12 | Stikine River | 56°43'N, 132°07'W | O | Placer | Au | Fine Au discovered on river bars in 1860's. Most of activity probably was on Canadian side of boundary | | Placer |
| 13 | -- | 56°28'N, 133°26'W | C | Lode | RA | -- | | -- |
| 14 | -- | 56°28'N, 133°26'W | C | Placer | Au | -- | | Placer |
| 15 | Maid of Texas | 56°34'N, 133°02'W | O | Vein | Ag(?), Au(?) | Group of claims adjoining Maid of Mexico. Vein on property may be similar to or a continuation of one on Maid of Mexico | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 16 | Helen S. | 56°34'N, 133°04'W | M,O | Vein; massive; disse | Ag,Au,Pb, Zn | Au- and sulfide-bearing qz veins and massive and disseminated sulfides in interbedded black slate, felsic meta-tuff, and greenstone. Massive sulfide occurrence consists of crude bands up to 10 cm thick of massive py, po(?), aspy(?), sl, and gn interstratified(?) with hem-bearing phyllitic felsic meta-tuff. An unknown small amount of ore reported to have averaged 0.177 oz Au per ton was mined from the qz veins in early 1900's by 2 shafts and about 650 ft of drifts and crosscuts | Buddington, 1923, p. 56-57, 67 | VM, V |
| 17 | Maid of Mexico | 56°34'N, 133°02'W | M | Vein; dissem | Ag,Au,Cu, Pb,Zn | Qz vein 2-6 ft thick in graphitic slate contains sl, py, Ag-bearing gn, and a small amount of cp and free Au. Slate is interbedded with, or intruded by, felsic igneous rocks that contain dis-seminated py. Total production in early 1900's probably did not exceed 100 oz each of Au and Ag. Adit and about 1,000 ft of underground workings | Buddington, 1923, p. 67-68; Berg and Grybeck, 1980 | V |
| 18 | -- | 56°32'N, 133°04'W | C | Lode | Ag,Au | -- | | -- |
| 19 | Hattie | 56°32'N, 133°03'W | P | Vein | Ag,Au,Cu, Pb,Zn | Qz fissure and breccia veins in sheared greenstone contain 3% or less py, cp, gn, sl, and Au; some Ag values. Explored by 500 ft of underground workings in early 1900's; no production | Wright and Wright, 1908, p. 182-184 | V |
| 20 | Deleted | | | | | | | |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 21 | -- | 56°33'N, 132°02'W | C | Lode | Ag,Au,Pb | -- | | -- |
| 22 | -- | 56°32'N, 132°03'W | C | Lode | Mo | -- | | -- |
| 23 | -- | 56°31'N, 132°03'W | C | Lode | Ag,Au,Pb | -- | | -- |
| 24 | Groundhog Basin | 56°31'N, 132°04'W | P | Massive; dissem; vein | Ag,Au,Cu, fl,Mo,Pb, Zn | Several tabular or lenticular bodies of massive sulfides averaging about 3 ft thick intercalated with calcsilicate and pelitic gneiss and schist. Deposit is mainly massive and disseminated po and sl, subordinate mag, gn, and py, and traces of cp and possibly Ag-bearing sulfosalts. Deposit and hostrocks are intruded by qz diorite and all in turn are cut by numerous qz porphyry sills and dikes. No recorded production. Deposit estimated to contain several hundred thousand tons of massive sulfide ore averaging about 8% Zn, 1.5% Pb, and 1.5 oz Ag per ton; and an equal amount of disseminated sulfide ore averaging about 2.5% Zn and 1% Pb. Deposit explored intermittently since 1904 by surface cuts, about 450 ft of underground workings, and probably several thousand feet of diamond drill holes. The area has also been prospected for precious- and base-metal qz and fluorite fissure veins and for porphyry Mo deposits | Buddington, 1923, p. 57-63; Gault and others, 1953, p. 15-28 | V, MS, P(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 25 | -- | 56°29'-31'N, 132°06'W | C | Placer | Sn | Placer claims along Porterfield Creek | | Placer |
| 26 | Lake | 56°29'N, 132°05'W | M | Vein | Ag,Au(?), Cu,Pb,Zn | Qz-calc veins, breccia fillings, and stringer lodes containing gn, sl, py, and cp occur in a fault zone 10-25 ft wide in metasedimentary rocks. Average grade of 7 samples is 0.99% Pb, 1.01% Zn and 0.12 oz Ag per ton. Au reported in early 1900's. About 250 ft of underground workings; one ton of ore shipped to a smelter in 1920 | Buddington, 1923, p. 63-65; Gault and others, 1953, p. 41-46 | V |
| 27 | Glacier Basin | 56°29'N, 132°01'W | P | Dissem; vein; massive | Ag(?),Au(?) Cu,Fe,fl, Pb,Zn | Massive and disseminated sl, gn, po, and mag in paragneiss; and gn, sl, po, py, and cp in qz-fl fissure veins and breccia that cut the paragneiss. Stratabound deposit in paragneiss probably contains many hundreds of thousands of tons of material containing about 1.65% Zn and 1.1% Pb. Veins and breccia zones probably contain several million tons of rock with about 0.14% Zn and 0.09% Pb. Reports in early 1900's mention possible low values in Au and Ag. 3 short adits; no production | Wright and Wright, 1908, p. 188-189; Gault and others, 1953, p. 29-40 | V, MS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 28 | Berg Basin | 56°27'N, 132°01'W | P | Vein; dissem; massive(?) | Ag,Au,Cu, Pb,Zn | Metamorphosed stratabound massive(?) sulfide deposit and epigenetic veins. Possibly similar to and continuous with deposits in Glacier and Groundhog Basins. Prospect staked in about 1900 on a 1 ft thick qz vein reported to carry about 0.68 oz Au per ton. Basalt dikes locally contain pods of argentiferous gn and minor py and sl. 800-ft crosscut in early 1900's; subsequent diamond drilling | Gault and others, 1953, p. 47-55 | V, MS(?) |
| 29 | Exchange | 56°25'N, 132°32'W | P | Vein | Au | Qz vein 12-15 ft thick in granite contains py and is reported to carry moderate values in Au. Surface cuts and crosscut 45 ft long in early 1900's. No record of production | | V |
| 30 | -- | 56°02'N, 132°28'W | C | Lode | RA | -- | | -- |
| 31 | -- | 56°21'N, 132°20'W | C | Lode | W | -- | | -- |
| 32 | -- | 56°22'N, 132°17'W | C | Lode | Fe | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 33-35 | Salmon Bay | 56°16'- 56°19'N, 133°07-133°10'W | D | Vein | Cu,Fe, Pb(?),REE, Th,U | Carbonate fissure veins 1 in. to 4 ft thick in hematitically-altered Silurian graywacke cut by Cenozoic(?) lamprophyre and alkalic dikes. Veins contain small amounts of radioactive, rare-earth, and sulfide minerals, accompanied by a diverse suite of silicate and oxide gangue minerals. Samples of radioactive veins contain as much as 0.095% eU (mainly due to Th). Rare-earth bearing veins contain an average of 0.79% (maximum in one grab sample was 5.0%) combined rare-earth oxides. Veins have been prospected intermittently since the early 1950's | Houston and others, 1958, p. 6-23; Eakins, 1975, p. 50-54 | VR |
| 36 | -- | 56°18'N, 133°09'W | C | Lode | RA | -- | | -- |
| 37 | -- | 56°15'N, 133°07'W | C | -- | RA | -- | | -- |
| 38 | Zarembo Is. | 56°17'N, 132°57'W | D | Vein | fl | Fl-chalcedony fissure veins and fault breccias up to about 10 ft thick in Tertiary dikes and flows of rhyolite, andesite, and basalt | | V |
| 39 | Point St. Albans | 56°06'N, 133°58'W | D | Vein; disseм | Ag,Au,Cu, Pb,Zn | Sulfide-bearing qz-carbonate veins and sulfide disseminations in metamorphosed Paleozoic bedded rocks, and in porphyritic andesite or diorite plugs and dikes. Sulfides include py, po(?), aspy, sl, gn, and td. | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 40 | -- | 56°11'N, 133°26'W | C | -- | Au | -- | | -- |
| 41 | Castle & Co. | 56°08'N, 133°27'W | P | Vein | Au | Qz vein reported in early 1900's to carry auriferous py. No record of production | | V |
| 41 | Shakan | 56°08'N, 133°27'W | M | Vein | Cu,Mo,Zn | Vertical fault breccia zone 1-10 ft wide in hornblende diorite contains masses and disseminations of mo, py, sl, po, cp, and mag in gangue composed of country rock fragments, qz, calc, and silicate minerals. 570-ft tunnel and surface cuts in early 1900's. Estimated resources are 10,000-20,000 tons of rock containing about 1.5% $MoS_2$. 500 tons of ore removed during exploration, but not shipped | Smith, 1942b, p. 169-171; Twenhofel and others, 1946, p. 19-30 | V, S(?) |
| 42-46 | Dry Pass | 56°09'N, 133°25'-133°27'W | P | Dissem; vein | Cu,Fe,Mo, Pb,W | Lodes in or near granodiorite pluton carry mo or various combinations of py, po, cp, mo, and gn. Qz veins in marble lenses in a shear zone and in silicified(?) rock near a marble-granodiorite contact carry disseminated sc. A band of mag 2.5 ft thick follows a contact between marble and a diorite dike. Little exploration | Herreid and Kaufman, 1964, p. 5 | P,V,S |
| 43 | Lillie | 56°09'N, 133°26'W | P | Vein; dissem | Cu,Mo | Band of tactite about 100 ft wide, enclosed by diorite contains joint coatings and disseminations of mo and pow, and at least one small mass of mag, cp, and py. Samples contained 0.16% Mo and as much as 0.09% Cu. Trenching in early(?) 1900's | Herreid and Kaufman, 1964, p. 7-8, 10-11 | S |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 47 | Devilfish Bay | 56°08'N, 133°23'W | P | Dissem(?) | Cu,Fe,Mo, U | Mag, cp, and minor mo in tactite inclusions in granodiorite and in tactite in marble and graywacke-siltstone. One sample contained 8 ppm U. Trenching in early(?) 1900's | Herreid and Kaufman, 1964, p. 4, 9-11; Eakins, 1975, p. 54-57 | S |
| 48 | -- | 56°08'N, 133°17'W | C | Lode | Ag,Au,Pb | -- | | -- |
| 49 | Blashke Islands | 56°08'N, 132°54'W | O | Dissem | Au,Cr,Cu, Ni,Pt | Zoned ultramafic pluton contains magmatic segregations of disseminated po and cp near contact of pyroxenite and gabbro zones, and of sparsely disseminated chromite in dunite core. Large aggregate tonnage of rock containing 1-2% sulfides. Analyses of sulfide-bearing gabbro indicate as much as 0.016% Cu and 0.05% Ni and less than 0.1 oz Pt-group metals per ton. Other analyses show up to 0.004 oz Au per ton, and 0.04 oz Pd per ton; and still others show 0.02 ppm each of Pt and Pd | Kennedy and Walton, 1946, p. 76-78; Walton, 1951, p. 16-205 | MOS |
| 50 | -- | 56°06'N, 132°04'W | C | Lode | Au | -- | | -- |
| 51 | -- | 56°03'N, 132°11'W | C | Lode | RA | -- | | -- |
| 52 | -- | 56°03'N, 132°06'W | C | Lode | Cu | -- | | -- |
| 53 | -- | 56°02'N, 132°06'W | C | Lode | Cu | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 54 | -- | 56°03'N, 132°06'W | C | Lode | Cu | -- | | -- |
| 55 | -- | 56°03'N, 132°06'W | C | Lode | Cu | -- | | -- |
| 56 | -- | 56°02'N, 132°06'W | C | Lode | Cu | -- | | -- |
| 57 | Le Conte Bay | 56°47'-48'N, 132°27'-30'W | D | Vein | Au | Au veins in schist; no other information | | V |
| 58 | Creek 2 mi N. of mouth Castle Creek | 56°40'18"N, 133°15'27"W | D | Massive; dissem | Ag,Pb,Zn | Lenses up to 1 m long of massive py, sl, and argentiferous gn in Upper Triassic felsic metatuff and chert-like rock, intercalated with pyritic carbonaceous metasedimentary rocks. Outcrop of massive-sulfide-bearing zone is 3-4 m wide and 30-40 m long. Geochemical analyses indicate anomalous values in Pb and Zn, and up to 100 ppm Ag | Berg and Grybeck, 1980 | VM |
| 59 | Coast between loc. 58 and mouth of Castle Creek | 56°40'02"N, 133°15'25"W | D | Massive; dissem | Ag,Pb,Zn | Locally rusty-weathering light gray muscovite-rich siliceous metatuff(?) contains 5-15% disseminated py and sl, and locally up to 2-m thick zones of massive (about 50%) pyrite. Geochemical analyses indicate anomalous values in Pb and Zn, and up to 10 ppm Ag | Berg and Grybeck, 1980 | VM |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 60 | Zarembo Is. | 56°22'56"N, 132°53'53"W | D | Massive | Ag,Au,Cu, Pb,Zn | Approximately 10-m thick zone of Upper Triassic(?) banded greenish gray felsic metatuff contains layers up to 1.5 m thick of massive py, po(?), sl, cp, and gn. 30-m long outcrop of massive sulfides is bounded by steeply-dipping faults and dikes. SS analyses of grab samples of massive sulfides and of host-rocks indicate anomalous values in Cu, Pb, and Zn, and up to 0.55 ppm Au and 30 ppm Ag | Berg and Grybeck, 1980 | VM |
| 61 | Zarembo Is. ("Frenchie") | 56°25'08"N, 132°57'07"W | P | Massive; dissem | : g,Au,Cu, Pb,Zn | Layers and lenses as much as 2 m thick of massive py, po(?), sl, cp, and gn in Upper Triassic(?) felsic metavolcanic rocks interbedded with recrystallized carbonaceous limestone and calcareous sedimentary rocks. Hostrocks and deposit are intruded by Tertiary(?) andesite dikes. SS analyses of grab samples of massive sulfides and of host-rocks indicate anomalous values in Cu, Pb, and Zn, and up to 5.5 ppm Au and 20 ppm Ag. 50-ft tunnel and short(?) shaft in early 1900's. Diamond drilling in 1980's | Buddington, 1923, p. 69; Berg and Grybeck, 1980 | VM |
| 62 | Zarembo Is. | 56°22'29"N, 132°54'53"W | D | Vein; dissem | Ag,Cu,Pb, Zn | Qz veins and lenses in shear zone 1.5 m wide in altered Tertiary granodiorite contain cp, bn, gn, sl, aspy, and possibly mag. Altered wallrock contains disseminated gn. SS analyses of sulfides and hostrocks indicate anomalous values in Cu, Pb, and Zn, and up to 50 ppm Ag | | V |

PETERSBURG QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 63 | Deleted | | | | | | | |
| 64 | Hamilton Creek | 56°52'N, 133°40'W | D | Vein | U | Fragments of laminated phosphatic rock are suspended in white calc veins in laminated, ap-bearing silty dolomite. Samples contain 30-50% U-bearing ap. Radioactive anomaly reaches 20 times background for 0.5 m thick bed. | Dickinson, 1979b | SU |
| 65 | SE Zarembo Is. | 56°16'50"N, 132°42'10"W | D | Massive; dissem | Cu(?), Zn(?) | Disseminated py and pods up to a foot or so long and 6 in. thick of massive py and probably other sulfide minerals in ironstained qz-mu schist derived from Upper Triassic(?) felsic tuff | | MS(?) |

PORT ALEXANDER QUADRANGLE
(latitude 56°-57°N; longitude 134°-136°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | 8/BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1,2 | Goddard Hot Springs | 56°50'N, 135°22'W | O | Placer | REE,U,W | Heavy mineral concentrates from slope-wash and stream-gravel samples contained as much as 7% all and traces of rt, mz, and sc. Highest eU 0.016% | West and Benson, 1955, p. 47-49 | Placer |
| 3 | Bullion | 57°00'N, 135°09'W | P | Vein(?) | Au(?) | -- | | V(?) |
| 4 | -- | 57°°00N, 135°07'W | C | Unknown | Au | -- | | -- |
| 5 | Silver Bay | 57°00'N, 135°08'W | P | Vein | Au,Cu | Auriferous qz vein in graywacke contains py and cp. Prospecting in early 1900's; no record of production | | V |
| 6 | Eureka | 56°59'N, 135°09'W | P | Vein | Au(?),Cu | Qz stringers in slate contain py and cp. No data on possible Au content. Little development | | V |
| 7 | -- | 56°58'N, 135°09'W | C | Lode | Au | -- | | -- |

8/ Geologic descriptions of deposits in the Port Alexander quadrangle are adapted mainly from summaries in one or more of the following general references: Berg and others (1981, p. 93-95); Cobb (1972h and 1978g); and Grybeck and others (1984). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claim map for the quadrangle (U.S. Bureau of Mines, 1978h)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 8 | Bauer | 56°58'N, 135°06'W | P | Vein | Au | Qz veinlets in graywacke contain py, po, and auriferous aspy; said to carry approximately 0.22 oz Au per ton. About 1050 ft of workings in early 1900's. No record of production | | V |
| 9 | -- | 56°58'N, 135°07'W | C | Lode | Au | -- | | -- |
| 10 | Silver Bay | 56°57'- 57°00'N, 135°03'-135°09'W | P | Vein | Ag(?), Au(?) | Small amounts of Au and Ag may have been recovered from qz veins in slate(?) in late 1800's | | V |
| 11 | Lower Ledge | 56°59'N, 135°06'W | P | Vein(?) | Au(?) | -- | | V(?) |
| 12 | Cache | 56°58'N, 135°06'W | M | Vein | Ag, Au | Qz vein up to about 10 ft thick reported to have averaged about 0.36 oz Au per ton and some Ag. 3 drifts up to 160 ft long; unknown amount of ore mined and milled in late 1800's | | V |
| 13 | Free Gold | 56°58'N, 135°05'W | P | Lode | Au(?) | -- | | -- |
| 14 | -- | 56°58'N, 135°04'W | C | -- | Au | -- | | -- |
| 15 | Lucky Chance | 56°57'N, 135°03'W | M | Vein | Ag, Au | Qz stringers and vein up to 8 ft thick along(?) contact of slate and graywacke contain py, aspy, and free Au. A sample of ore assayed about 1.45 oz Au per ton. A little production in early 1900's from about 600 ft of underground workings | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 16-23 | Hill | 56°54'- 56°58'N, 134°55'-135°00'W | 0 | Dissem; vein | Cr | Magmatic segregations of cr form small lenses, thin layers, and disseminated grains in small serpentinite bodies derived from dunite and pyroxenite | Guild and Balsley, 1942, p. 173-174, 177-180; Kennedy and Walton, 1946, p. 72-73 | MOS |
| 24 | Red Bluff Bay | 56°51'N, 134°43'W | P | Stratiform(?) | Cr | Magmatic segregations of cr form thin tabular bodies in serpentinized dunite sill in phyllite and greenschist. Resources in 8 known deposits aggregate about 30,000 tons of material containing 18-40% $Cr_2O_3$. Chrome-Fe ratio ranges from 18.65 to 50.56. Lit-exploration and no production since discovery in 1930's | Guild and Balsley, 1942; Kennedy and Walton, 1946, p. 73-75 | MOS |
| 25 | Snipe Bay | 56°25'N, 134°57'W | P | Stratiform(?); massive, dissem | Ag(?),Cu, Ni | Massive and disseminated magmatic segregations of mag, pent, cp, py, and po in gabbro-norite and hornblendite pluton cutting graywacke hornfels. Deposit probably contains at least 430,000 tons of material averaging up to 0.3% each of Ni and Cu. 0.13 oz Ag/ton reported in early assay. Little exploration and no production since discovery in early 1920's | Reed and Gates, 1942 | MOS |
| 26 | Deleted | | | | | | | |
| 27a-c | Saginaw Bay | 56°52'- 56°54'N, 134°09'-134°17'W | 0 | Vein | ba | Barite fissure veins up to 5 ft thick in limestone, conglomerate, and volcanic rocks | Buddington, 1925, p. 72, 136-138 | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 28a-d | Cornwallis Peninsula | 56°55'- 56°56'N, 134-10°-134°15'W | D | Vein; dissem | ba,Zn | Masses of ba as much as 5 ft in diameter; ba vein up to 1.5 ft wide and 200 ft long; and many short ba-wi veinlets in Upper Triassic felsic metavolcanic rocks. Very finely disseminated sl in calcite-cemented Carboniferous limestone breccia. Area reported to contain a stratabound massive Cu-Pb-Zn-Ag massive sulfide-barite deposit containing up to 20% Pb + Zn and 23 oz Ag/ton (Bundtzen, 1984, p. 43) | Twenhofel and others, 1949, p. 40-42 | V, OS |
| 29a-e | Keku Islets | 56°54'- 56°57'N, 134°04'-134°09'W | C | Lode | ba | -- | | -- |
| 30 | -- | 56°54'N, 134°08'W | C | Lode | Au | -- | | -- |
| 31 | Keku Islet | 56°55'N, 134°08'W | D | Vein | ba,Pb | Veins and veinlets in limestone and marble and rarely in basalt dikes contain ba and wi; one veinlet contains py and a few streaks of gn | Twenhofel and others, 1949, p. 40-41, 43-44 | V |
| 32 | Keku Islet | 56°56'N, 134°08'W | D | Vein | Ag,Au(?), Zn | Si fills transverse fractures in altered Tertiary(?) basalt dike in sandstone and conglomerate. Country rocks next to dike are shattered and contain minutely brecciated py and ms healed by si. Sample of si-rich material contained 37.4% Zn, 0.24 oz Ag per ton, and possible trace of Au | Buddington, 1925, p. 137-139 | V |
| 33 | -- | 56°53'N, 134°06'W | C | Lode | Ag,Mn,Pb | -- | | -- |

PORT ALEXANDER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 34 | -- | 56°53'N, 134°04'W | C | Lode | Pb,Zn | -- | | -- |
| 35 | Port Malmesbury | 56°20'N, 134°09'W | D | Unknown | Ag,Au,Pb, Zn | Zn-Pb deposit said to contain Au and Ag. No other public data | | V(?) |
| 36a-d | -- | 56°15'- 56°19'N, 134°09'-134°12'W | C | Lode | Ag,Au,Pb | Total of 38 lode claims in Port Malmesbury area | | -- |

PRINCE RUPERT QUADRANGLE
(latitude approx. 54°30'-55°N; longitude 130°-132°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | 9/BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1 | Cow | 54°58'N, 131°35'W | C | Dissem | Fe | Magmatic segregations of titaniferous mag (Fe) in hnbd clinopyroxenite or of chromite (Cr) in dunite and peridotite, in Cretaceous zoned ultramafic intrusive complex. Private drilling at locs. 1 and 2 | | MOS |
| 2 | Percy | 54°57'N, 131°36'W | P | do | Fe | do | Taylor and Noble, 1960, p. 181 | MOS |
| 3 | Stebbins | 54°56'N, 131°37'W | C | do | Fe | do | | MOS |
| 4 | -- | 54°57'N, 131°26'W | P | do | Fe | do | | MOS |
| 5 | -- | 54°56'N, 131°24'W | P | do | Fe | do | | MOS |
| 6 | -- | 54°56'N, 131°23'W | P | do | Fe | do | | MOS |
| 7 | -- | 54°56'N, 131°22'W | P | do | Cr | do | Irvine, 1949, p. 57-58, 182-183 | MOS |

9/Geologic descriptions of deposits in the Prince Rupert quadrangle are mainly quoted from summaries in Berg and others (1981, p. 96-97); or are based on claim maps of the quadrangle (U.S. Bureau of Mines, 1974 and 1977b).

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 8 | Dud | 54°56'N, 131°21'W | C | do | Fe | do | | MOS |
| 9 | Peter(?) | 54°56'N, 131°20'W | C | do | Fe | do | | MOS |
| 10 | Red | 54°56'N, 131°19'W | C | do | Fe | do | | MOS |
| 11 | Ditto(?) | 54°56'N, 131°22'W | C | do | Fe | do | | MOS |
| 12 | Cove | 54°55'N, 131°21'W | C | do | Fe | do | | MOS |
| 13 | -- | 54°55'N, 131°23'W, | P | do | Fe | do | | MOS |
| 14 | Camp | 54°54'N, 131°22'W | C | do | Fe | do | | MOS |
| 15 | -- | 54°54'N, 131°18'W | P | do | Cr | do | Irvine, 1959, p. 57-58, 182-183 | MOS |
| 16 | Richard | 54°53'N, 131°18'W | C | do | Fe | do | | MOS |
| 17 | -- | 54°53'N, 131°15'W | P | Dissem(?) | Cu,Ni | Probably disseminated sulfides in mafic igneous rocks | Irvine, 1959, p. 82 | MOS |
| 18 | Creek(?) | 54°52'N, 131°17'W | P | Dissem | Fe | Segregations of titaniferous mag in hnbd clinopyroxenite in Cretaceous zoned ultramafic pluton | | MOS |
| 19 | Ted | 54°52'N, 131°12'W | C | Placer | Au | -- | | Placer |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 20 | Betty, Hope | 54°50'N, 131°54'W | C | Lode | RA | -- | | -- |
| 21 | Betty, Hope, Donna | 54°50'N, 131°54'W | C | Lode | RA | -- | | -- |
| 22 | Nelson and Tift Mine | 54°49'N, 131°58'W | M | Massive; dissem; vein | Ag, Au, Cu, Pb | Massive and disseminated py, cp, and bn form a lens 75 ft long, 30 ft deep, and 9 ft wide in a septum of marble, and other calcareous rocks in qz diorite. Total production before WW II of about 1,300 tons of ore from which Au, Ag, Cu, and Pb were recovered. Shipment of sulfides in 1935 yielded 0.73 oz Au per ton, and 0.05 oz Ag per ton. Py-bearing auriferous(?) qz veinlets up to 6 in. thick cut calcareous rocks near northern margin of septum, and py and minor mag are disseminated in the marble | MacKevett, 1963, p. 99-100 | V, S(?) |
| 23 | Gardner Bay | 54°48'N, 131°58'W | P | Dissem | RA | Sparsely distributed black radioactive minerals in pegmatite that cuts qz diorite. Surface prospecting in mid(?)-1900's | MacKevett, 1963, p. 93-94 | MUR |
| 24 | Rebekah | 54°47'N, 131°59'W | C | Lode | RA | -- | | -- |

SITKA QUADRANGLE
(latitude 57°-58°N; longitude 134°-136.40°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | 10/BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1a-c | S. Yakobi Is. | 57°52'- 57°58'N, 136°27'-136°32'W | C | Lode | Ni | Ten lode claims | | MOS(?) |
| 2,3 | Bohemia Basin | 57°58'- 57°59'N, 136°25'-136°26'W | P | Stratiform; massive; dissem | Ag(?), Au(?),Cu, Ni,Pt(?) | Magmatic segregations chiefly of po, pent, and cp that form a troughlike body about 150 ft thick near the base of a basin-shaped body of norite that is part of a composite layered mafic stock. Estimated resources consist of 22 million tons containing 0.33-0.51% Ni, 0.21-0.27% Cu, and 0.04% Co (Bundtzen, 1984, p. 43). One old assay indicated traces of Au, Ag, and Pt group metals. Trenches, tunnel, diamond drillholes. | Buddington, 1925, p. 95, 98-105, 113; Reed and Dorr, 1942, p. 105-138; Kennedy and Walton, 1946, p. 41-56; Johnson and others, 1982, p. 8 | MOS |
| 4 | S. Yakobi Is. | 57°57'N, 136°23'W | C | Lode | Ni | Four lode claims | | MOS(?) |
| 5 | Squid Bay Yakobi Is. | 57°56'N, 136°28'W | C | Lode | Cu,Ni | Four lode claims | | MOS(?) |
| 6 | -- | 57°53'N, 136°28'W | C | Lode | Ni | Three lode claims | | MOS(?) |

10/Geologic descriptions of deposits in the Sitka quadrangle are adapted mainly from summaries in one or more of the following general references: Berg and others (1981, p. 98-110) and Cobb (1972j and 1978h). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claim map for the quadrangle (U.S. Bureau of Mines, 1978i)

SITKA QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 7 | -- | 57°52'N, 136°27'W | C | Lode | Ni | Eight lode claims | | MOS(?) |
| 8 | Bohemia Basin | 57°59'N, 136°23'W | C | Lode | Cu,Ni | Lode claims | | MOS(?) |
| 9 | -- | 57°59'N, 136°22'W | C | Lode | Ni | Two lode claims | | MOS(?) |
| 10 | Goldwin | 57°59'- 58°00'N, 136°20'W | M(?) | Vein; dissem | Ag,Au,Cu | Lenticular py- and cp-bearing auriferous qz veins as much as two ft thick along faults in diorite pluton. Altered wallrock also contains some Au. Surface mining of richest parts of veins in 1930's. No record of production | Rossman, 1959b, p. 204-208 | V |
| 11 | -- | 57°58'N, 136°17'W | P | Vein(?) | Au | Traces of Au in fault zone between diorite and quartz diorite | | V(?) |
| 12 | Wakefield | 57°57'N, 136°18'W | P | Vein(?) | Au(?) | Claims, presumably for Au, staked in 1920 | | V(?) |
| 13 | Cann Creek | 57°58'N, 136°16'W | P | Vein | Au | Qz vein 6-12 in. wide in diorite estimated to carry as much as 1 oz Au per ton | | V |
| 14 | Nilsen | 57°58'N, 136°16'W | P | Vein(?) | Au(?) | Two claims staked in 1923. No other data | | V(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 15 | Apex-El Nido | 57°57'N, 136°17'-136°18'W | M | Vein; dissem | Ag,Au,Cu, Pb,W,Zn | Qz fissure veins up to 5 ft thick and qz stockwork in diorite and in amphibolite inclusion contain py, aspy, cp, gn, sl, td, sc, and free Au. Altered wallrocks contain disseminations of some of these minerals. Production 1912-1939 was about 20,000 oz of Au and 3,000 oz of Ag. According to Bundtzen (1984, p. 43), Au production exceeded 50,000 oz. Total length of workings more than a mile | Buddington, 1925, p. 114-121; Buddington and Chapin, 1929, p. 317-319; Reed and Coats, 1941, p. 143-145; Twenhofel and others, 1949, p. 20-23; Johnson and others, 1982, p. 6 | V |
| 16 | Stag Bay | 57°55'N, 136°13'W | P | Vein | Fe,Cu | Sheared gabbro or diorite locally contains py and up to 2% cp and 60% mag. Trenches | | MOS(?) |
| 17 | Etna | 57°55'N, 136°19'W | P | Vein | Au | Qz vein averaging 16-18 in. thick in diorite stock carries some Au. Surface exploration in 1920's | | V |
| 18 | Stag Bay | 57°55'N 136°18'W | P | Vein; dissem | Au | Auriferous qz(?) veins in small diorite mass and in adjacent metamorphic rocks | | V |
| 19 | Cub Mtn. | 57°33'N, 136°17'W | O | Vein | Au | Qz vein about 1 ft thick in diorite contains visible Au. Assays indicate about one oz Au per ton | | V |
| 20 | Cobol (Pinta Bay) | 57°51'N, 136°13'W | M | Vein | Au,Cu,Pb, Zn | Qz fissure veins up to 2 ft thick in altered qz diorite and in greenstone contain aspy, sl, gn, py, cp, and po. About 100 oz of Au recovered from about 135 tons of ore mined in 1930's | Reed and Coats, 1941, p. 142-143; Johnson and others, 1982, p. 8 | V |
| 21 | Mine Mtn. | 57°51'N, 136°11'W | O | Vein; dissem | Au,Cu,Pb Zn | Qz fissure veins in greenstone(?) contain 0.01 oz Au per ton. | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 22 | Southside | 57°50'N, 136°13'W | P | Vein | Au | Qz vein 20 in. thick in greenstone(?) contains free Au. 10-ft tunnel in early 1900's | | V |
| 23 | Lake Elfendahl | 57°50'N, 136°15'W | O | Vein | Au(?),Cu, Pb,Zn | Auriferous(?) qz fissure veinlet in fault in greenstone(?) contains py, cp, sl, and gn | | V |
| 24 | Bertha Bay | 57°48'N, 136°21'W | P | Vein | Cu | Stringers of cp and po in an altered basic intrusive(?) at contact with quartzite(?) and schist. Little development | | V |
| 25 | Deleted | | | | | | | |
| 26 | Mirror Harbor | 57°47'- 57°48'N, 136°19'W | P | Stratiform: dissem; massive | Co(?), Cu,Ni | Magmatic segregations of disseminated and locally massive po, pent, and cp in norite that is part of a composite layered mafic stock; some secondary niccolite. Largest sulfide body contains about 8,000 tons of material averaging about 1.57% Ni, 0.88% Cu and probably a little Co. A disseminated deposit near Davison Bay contains several million tons of material containing about 0.2% Ni and about 0.1% Cu. 180 ft shaft and 150 ft of tunnels in early(?) 1900's; drilled and trenched by USBM in mid-1900's | Pecora, 1942, p. 221-243; Kennedy and Walton, 1946, p. 56-63 | MOS |
| 27 | Little Bay | 57°47'N, 136°18'W | P | Disseminated | Ag,Au,Cu, Ni | Cp and po in "quartzite" containing Cu, Ag, Au, and a trace of Ni | | DS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 28 | Princess Pinder | 57°47'N, 136°16'W | O | Vein | Au,Cu | Qz vein 7 ft thick between slaty rock and greenstone breccia contains scattered po and cp. Assays across lode show 0.48 oz Au per ton | | V |
| 29 | Snow Slide | 57°48'N, 136°15'W | P | Dissem | Cu | 6 ft zone of greenschist contains py, cp, and possibly some po. 171-ft tunnel in about 1916 | | DS |
| 30 | Baker Peak | 57°49'N, 136°14'-136°15'W | P | Massive; vein(?); dissem | Ag,Au,Cu, Pb | Upper Triassic(?) subaerial basalt flows (Goon Dip Greenstone) contain masses and disseminations of cp and py. Basalt intruded by aplite dikes. Wallrocks near dikes are hydrothermally altered, and both dikes and wallrocks locally contain disseminations, stringers, and small masses of cp and py that locally have been prospected for Ag, Au, Cu, and Pb. No recorded production. Largest known concentration of Cu is in a NW-striking vertical zone 350-400 ft long and up to 13 ft thick. Two channel samples by USBM averaged 2.0% Cu and 7.5% Cu. Assays in early 1900's reported Au, Ag, Pb. 300 ft of tunnels and crosscuts, a shallow shaft, and open cuts | Overbeck, 1919, p. 121-123; Johnson and others, 1982, p. 8 | DS, V(?) |
| 31 | New Chichagof Mining Syndicate | 57°47'N, 136°11'W | P | Vein | Au(?) | Auriferous qz breccia in fault zone in bedded rocks and diorite. Tunnels totaling about 950 ft long. USBM samples of 110 ft of the breccia averaged 0.24 oz Au per ton across a width of 4 ft. No data on possible production | Reed and Coats, 1941, p. 81, 137-139 | V |

SITKA QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 32 | Golden Hand | 57°46'N, 136°11'W | M(?) | Vein | Au(?) | Auiferous qz veins and qz breccia in fault(?) zone in limestone intruded by qz diorite. Minor production of Au in 1979 | Reed and Coats, 1941, p. 136-137 | V |
| 33 | -- | 57°45'N, 136°12'W | C | Lode | Au,Cu | -- | | -- |
| 34 | -- | 57°55'N, 136°05'W | C | Lode | Fe | Three lode claims | | -- |
| 35 | -- | 57°52'N, 136°02'W | C | Lode | Fe | Four lode claims | | -- |
| 36 | Koby (and Shepard) | 57°50'N, 136°00'W | P | Vein | Au,Pb,Zn | Lenticular qz bodies as much as 7 ft thick in a fault zone in greenschist contain free Au and about 1% aspy, py, sl and gn. Pits, trenches, and 280 ft adit and crosscut. No known production | Reed and Coats, 1941, p. 141-142 | V |
| 37 | -- | 57°59'N, 135°52'W | C | Lode | Ni | Six lode claims | | -- |
| 38 | -- | 57°53'N, 135°52'W | C | Lode | Au | -- | | -- |
| 39 | Congress | 57°44'N, 136°16'W | P | Vein | Cu | Qz lenses and veinlets in 12-ft thick zone in schistose greenstone lens in graywacke contain sparse cp and po. 25-ft tunnel. No data on Au content, if any | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 40 | Radio | 57°41'N, 136°08'W | P | Vein; dissem | Au(?) | Auriferous(?) qz fissure veins up to a ft thick in faults in graywacke cut by dikes of unknown type. Dikes and probably veins contain py and aspy. Tunnels up to about 500 ft long driven in early 1900's. No other data | | V |
| 41 | Bauer & Soni | 57°41'N, 136°07'W | P | Vein | Au(?) | 20-ft tunnel on Au(?) claim in early 1900's | | V |
| 41 | Chichagof Prosperity | 57°41'N, 136°07'W | P | Vein | Au(?) | Auriferous(?) qz fissure veins as much as 3 ft thick in faults in graywacke. 200 ft of underground workings | Reed and Coats, 1941, p. 133-134 | V |
| 41 | Gloria B. | 57°41'N, 136°07'W | P | Vein | Au(?) | Auriferous(?) py-bearing qz veinlets in dike cutting graywacke. Surface exploration in early 1900's | | V |
| 42 | Hirst-Chichagof | 57°40'- 57°41'N, 136°05'-136°07'W | M | Vein | Ag,Au,Cu, Pb,Zn | Auriferous ribbon-qz fissure veins in slate and graywacke contain locally massive aspy, py, sl, gn, and cp. Production 1922-1938 from 12 underground levels was about 87,980 oz Au and 20,000 oz Ag; some Pb and Cu probably recovered at smelter | Overbeck, 1919, p. 116-119; Reed and Coats, 1941, p. 78-81; Johnson and others, 1982, p. 5-6 | V |
| 42 | Tillson | 57°41'N, 136°06'W | P | Vein | Au(?) | Auriferous(?) qz fissure veins in faults in graywacke(?). Tunnels up to 95 ft long | | V |
| 43 | Marinovich | 57°41'N, 136°06'W | O | Vein | Au(?) | Auriferous(?) qz fissure veinlets in joints and faults in graywacke. Tunnel driven 27 ft in early 1900's | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 44 | McKallick | 57°41'N, 136°05'W | Q | Vein | Au(?) | Auriferous qz fissure veins in faults in graywacke. Two tunnels totaling 90 ft long | | V |
| 45 | Hanlon | 57°40'N, 136°10'W | P | Vein; dissem(?) | Au(?) | Auriferous(?) qz fissure veinlet in fault in graywacke contains py and aspy | | V |
| 46 | American Gold Co. | 57°39'N, 136°07'W | P | Vein | Au | Auriferous qz fissure vein in fault in graywacke. 200 ft of underground workings | Reed and Coats, 1941, p. 125-126 | V |
| 47 | Alaska-Chichagoff | 57°39'N, 136°06'W | M | Vein | Ag,Au | Auriferous qz fissure veins up to 5 ft thick in faults in graywacke. At least 660 tons of ore mined in early 1900's with recovery of 1 oz Au per ton and some Ag. About 675 ft of underground workings | Reed and Coats, 1941, p. 130-132 | V |
| 47 | Gold Reef No. 1 | 57°40'N, 136°07'W | P | Vein(?) | Au(?) | Probably auriferous(?) qz fissure vein in graywacke. 230-ft shaft and 2 levels in early 1900's | | V |
| 47 | Jumbo | 57°39'N, 136°06'W | M | Vein | Au,Pb,Zn | Qz veinlets in crushed zone in graywacke locally contain Au, py, gn, and sl. About 1650 ft of underground workings. Small production reported in 1921 | Reed and Coats, 1941, p. 126-128 | V |
| 47 | Minnesota | 57°39'N, 136°07'W | P(?) | Vein(?) | Au | Surface exploration on Au claim in early 1900's | Reed and Coats, 1941, p. 126-128 | V |
| 47 | Duluth | 57°39'N, 136°06'W | P | Vein(?) | Au(?) | Au(?) claim in early 1900's | | V |

SITKA QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 48 | Chichagof | 57°40'- 57°41'N, 136°05'-136°08'W | M | Vein | Ag,Au,Cu, Pb,Zn | Auriferous ribbon-qz fissure veins in faults in graywacke and slate contain py, aspy, gn, sl, cp, and free Au, and, locally, sc and td. Tabular pitching ore bodies averaged several feet thick and were up to a thousand feet long along plunge. Production 1905-WW II was about 700,000 oz of Au and 200,000 oz of Ag, with some reported recovery of Cu. Underground workings extend at least 4,750 ft horizontally and 3,950 ft vertically | Overbeck, 1919, p. 110-111, 113-116; Reed and Coats, 1941, p. 78-81, 86-101; Johnson and others, 1982, p. 5 | V |
| 48 | Flora | 57°40'N, 136°06'W | P | Vein | Au(?) | Auriferous(?) qz-calc fissure vein up to one ft thick in graywacke. 90-ft tunnel | | V |
| 48 | Lillian and Princella | 57°40'N, 136°06'W | P | Vein | Au(?),Pb | Auriferous(?) qz veinlet up to 1 ft thick in a joint in graywacke locally contains py and gn. Trench and several pits | | V |
| 49 | Handy-Andy Mining Co. | 57°40'N, 136°05'W | P | Vein | Au(?) | Auriferous(?) py-bearing qz fissure veins in faults or shear zone in graywacke. Tunnels, inclined shaft and winze | | V |
| 49 | Submarine | 57°40'N, 136°05'W | P | Vein(?) | Au(?) | Au(?) prospect staked several times in early 1900's | | V |
| 50 | Chichagof Extension | 57°39'N, 136°05'W | P | Vein | Au(?) | Auriferous(?) qz veins up to 3 ft thick in graywacke | | V |
| 50 | Hill and Berkland | 57°39'N, 136°05'W | P(?) | Vein | Au(?) | Auriferous(?) qz fissure veins up to 6 ft thick in faults in graywacke. 50-ft tunnel | | V |

SITKA QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 51 | Lucky Shot | 57°38'N, 136°04'W | P | Vein | Au(?), Pb, Zn | Auriferous(?) qz fissure veins in faults in graywacke contain gn, sl, po, and aspy. About 90 ft of underground workings | Reed and Coats, 1941, p. 121-122 | V |
| 52 | Anderson | 57°38'N, 136°01'W | P | Vein | Au(?) | Auriferous(?) qz fissure veins in faults in graywacke and interbedded greenstone. 36-ft long tunnel | | V |
| 53 | Baney | 57°37'N, 136°07'W | P | Vein | Au | Qz fissure veinlets up to about 1 ft thick in fault in graywacke reported to carry about 0.5 oz of Au per ton. 22-ft shaft | Reed and Coats, 1941, p. 120-121 | V |
| 54 | Elbow Passage | 57°37'N, 136°05'W | P | Vein | Au | Auriferous, locally py-bearing ribbon qz veins as much as a ft thick in faults and joints in graywacke. 29-ft shaft | Reed and Coats, 1941, p. 119-120 | V |
| 55 | Lake Anna | 57°38'N, 136°04'W | P | Vein | Au, Pb, Zn | Qz in a 3-5 ft wide fault zone in slaty rock contains py, gn, po, sl, and Au. 100-ft tunnel | | V |
| 55 | Lucky Shot | 57°39'N, 136°03'W | P | Dissem | Au(?) | Partly silicified dike 10 ft thick in graywacke; dike and hanging wall contain aspy and py. 12-ft tunnel | Reed and Coats, 1941, p. 121-123 | V, OS |
| 56 | Klag Bay | 57°38'N, 136°07'W | C | Lode | Au | Three lode claims | | -- |
| 57 | McKallick | 57°38'N, 136°09'W | P | Placer | Au | Residual Au placer probably derived from a nearby qz fissure lode | Reed and Coats, 1941, p. 124-125 | Placer |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 58 | -- | 57°37'N, 135°53'W | O | Dissem | Cu | Cp, py, and secondary Cu minerals in amygdaloidal greenstone | | DS |
| 59 | Falcon Arm | 57°33'N, 136°56'W | P | Dissem; vein | Ag,Au,Pb, Zn | Felsic aphanite dikes in massive graywacke locally contain py, gn and sl, and reportedly Au and Ag. Faults in graywacke locally contain qz veinlets. Underground workings up to about 2,200 ft long | Reed and Coats, 1941, p. 118-119 | V, DS |
| 60 | -- | 57°32'N, 135°49'W | O | Dissem | Cu | Secondary Cu minerals in qz and ep amygdules in greenstone | | DS |
| 61 | Cobol (Slocum Arm) | 57°30'N, 135°52'W | M | Vein | Au(?),Pb | Qz veinlets up to about a foot thick in fault zone in graywacke contain sparse py, gn, and Au. Tunnels totaling 1,900 ft long. Production records not available | Reed and Coats, 1941, p. 139-140 | V |
| 62 | -- | 57°28'N, 135°46'W | C | Lode | Mo | Disseminated(?) mo in qz veinlets, in dikes, and in metamorphic country rocks near a diorite(?) pluton | | V, P(?) |
| 63 | -- | 57°26'N, 135°46'W | O | Dissem | Cu,Zn(?) | Disseminated sulfides and secondary Cu minerals in greenstone; traces of Cu and Zn in ss analysis | | DS |
| 64a,b | Rodman Creek | 57°27'N and 57°25'N, 135°23'W | C | Lode | Au(?) | Two patented lode claims | | -- |
| 65 | -- | 57°20'N, 135°21'W | C | Lode | Ni | -- | | MOS(?) |
| 66 | Rodman Bay | 57°21'N, 135°18'W | P | Vein(?) | Au(?) | Qz veins(?) in slate reportedly contain Au and sulfides. 800-ft tunnel | | V(?) |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 67 | Sea Lion Cove | 57°17'N, 135°50'W | 0 | Vein | Cu,Mo | Qz veins in hornfels near pegmatite contain sparse cp and mo | | V |
| 68 | Sukoi Strait | 57°16'N, 135°42'W | C | Lode | Au | Four lode claims | | -- |
| 69 | N. Krestof Is. | 57°13'N, 135°33'W | C | Lode | Au | One lode claim, possibly on a vein that was privately drilled in late 1930's | | -- |
| 70 | Magoun | 57°10'N, 135°35'W | 0 | Vein; dissem | Cu,Mo | Qz veinlet as much as 6 in. thick in qz diorite contains cp, mo, cv, and py; mo also occurs in qz diorite near veinlet | | P(?), V |
| 71 | S. Halleck Is. | 57°11'N, 135°27'W | C | Lode | Au | Twenty-seven lode claims | | -- |
| 72 | Siginaka Is. | 57°10'N, 135°27'W | 0 | Dissem | Cu | Py, cp, and cv in Fe-stained greenstone | | DS |
| 73 | -- | 57°08'N, 135°22'W | C | Lode | Au | -- | | -- |
| 74 | -- | 57°06'N, 135°24'W | C | Lode | Au,Fe | -- | | -- |
| 75 | -- | 57°06'N, 135°24'W | C | Lode | Au | -- | | -- |
| 76 | -- | 57°06'N, 135°19'W | 0 | Dissem | Cr,Fe, Ni(?) | Mag and cr in serpentinite; ss analysis shows a little Ni | | MOS |
| 77 | Cascade | 57°04'N, 135°16'W | P(?) | Vein | Au(?),Cu | Zone 4-20 ft wide of shattered quartzite cemented by qz veinlets contains po, aspy, sparse cp, and probably Au | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 78 | Billy Basin | 57°05'N, 135°14'W | P | Vein | Ag,Au,Pb | Qz fissure veinlets in graywacke contain po and gn. Mill test around 1900 reportedly yielded $7 (about 1/3 oz) in Au and $1 in Ag per ton | | V |
| 79 | Blue Lake | 57°04'N, 135°12'W | P | Dissem(?) | Cu(?),Cr, Ni(?), Zn(?) | Fe-stained mafic igneous rock contains traces of Cr, Ni, Cu, Co, and Zn. Serpentinite nearby contains a little mag and cr and a trace of Ni | | DS, MOS |
| 80 | Boston | 57°02'N, 135°15'W | P | Vein(?) | Au(?) | Au prospect in Silver Bay area in early 1900's | | V(?) |
| 81 | Haley and Hanlon | 57°03'N, 135°11'W | P | Dissem; massive(?) | Co,Cu,Ni | Masses up to 10 in. wide and 2-3 ft long of po and cp in hornblendite. Sample contained 0.99% Cu, 0.20% Ni, and 0.09% Co. 15-ft adit | | MOS |
| 82 | -- | 57°02'N, 135°11'W | C | Lode | W | -- | | -- |
| 83 | -- | 57°01'N, 135°10'W | C | Lode | Ni | -- | | -- |
| 84 | Liberty | 57°00'N, 135°10'W | P | Vein | Au,Cu | Qz veins in slate cut by diorite dikes contain calc, chl, py, cp, and aspy. Mill tests as high as $5 per ton reported in late 1800's | | V |
| 85 | -- | 57°02'N, 135°09'W | C | Lode | Au | -- | | -- |
| 86 | -- | 57°01'N, 135°09'W | C | Placer | Au | -- | | Placer |

SITKA QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 87 | Bullion | 57°01'N, 135°07'W | P | Vein(?) | Au(?) | -- | | V(?) |
| 88 | -- | 57°06'N, 135°05'W | C | Lode | Au | -- | | -- |
| 89,90 | Deleted | | | | | | | |
| 91a | Baldy Lode | 57°48'N, 135°02'W | P | Dissem(?) | Cu | Fe-stained skarn zone at contact between limestone and granitic pluton contains py, mag, hem, cp, and po | | S |
| 91b | -- | 57°58'N, 135°06'W | P | Dissem | Cu | Diabase dike contains cp and secondary copper minerals. Ss analyses show traces of Ni, Zn, and Cr | | MOS(?) |
| 92 | 3 J | 57°47'N, 135°03'W | P | Dissem | Cu,Mo | Cp and mo in qz diorite and in aplite dikes. Chip sample of dike contained 0.01% Mo and 0.07% Cu; chip sample of qz diorite contained less than 0.01% of each | | P(?) |
| 93 | Big Ledge | 57°48'N, 134°55'W | P | Dissem | Cu,Ni,Zn | Mafic dike about 20 ft thick intruded into conglomerate contains disseminated po, cp, pent, and a little sl and py | | MOS |
| 94 | Kook Lake | 57°39'- 57°40'N, 134°58'-135°02'W | O | Float, stain | Ag,Au,U | In area underlain by syenite and trondhjemite, sample of float contained 0.012 oz Au and 0.014 oz Ag per ton; and sample of Fe-stained pyritic material contained 10 ppm U | | MUR(?) |
| 95 | Kelp Bay (Portage Arm) | 57°21'N, 134°56'W | O | Vein | Cu | Py, cp, and cv in Fe-stained qz vein in greenschist(?) | | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 96 | Kelp Bay (Catherine Is.) | 57°20'N, 134°54'W | O | Vein | Cu | Py and cp in qz vein in greenschist(?) | | V |
| 97 | Kelp Bay (Middle Arm) | 57°20'N, 135°00'W | O | Vein | Cu | Py, cp, cv, bn, and other(?) sulfides in Fe-stained qz vein in greenschist(?) | | V |
| 98 | Kelp Bay (South Arm) | 57°16'N, 135°01'W | O | Dissem | Cu,Zn | Py and Cu sulfides in Fe-stained brecciated siliceous rock. Zn identified by ss analyses | | DS, V(?) |
| 99 | Kelp Bay (The Basin) | 57°16'N, 134°54'W | O | Vein | Cu,Ni | Py and cp disseminated in limonite-stained vuggy qz vein in aplite and in volcanic rock. Ni identified by ss analyses | | DS, V |
| 99a | Warm Springs Bay (Baranof Is.) | 57°05'N, 134°48'W | P | Dissem(?); vein(?) | Cu,Mo | "Significant porphyry Cu-Mo prospect; grades of 0.25% Cu and 0.07% $MoS_2$ reported." | Information quoted from an unpublished 1978 report by Bear Creek Mining Company entitled "Significant mineral deposits and anomalies, southeast Alaska" | P(?) |
| 100 | Seymour Canal | 57°57'N, 134°18'W | P | Vein | Au(?),Cu | Qz veinlets in siliceous schist in zone as much as 20 ft wide carry cp and py and possibly a little Au. 60-ft shaft in early 1900's | | V |
| 101a,b | Windfall Harbor | 57°55'N,134°18'W 57°51'N,134°17'W | C | Lode | Cu | Nineteen lode claims | | -- |
| 102 | President | 57°48'N, 132°42'W | P | Vein; dissem | Au,Cu,Pb, Zn | Three 30-ft wide parallel zones of qz and schist contain po, py, cp, gn, sl, and a little free Au. Opencuts, shaft in early 1900's | | MS(?) |

SITKA QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 103 | -- | 57°44'N, 134°21'W | O | Dissem | Cu | Disseminated po and cp in schist; Cu content estimated at 0.1% | | DS |
| 104 | Windfall Harbor | 57°52'N, 134°15'W | C | Lode | Cu | -- | | -- |
| 105 | Windfall Harbor | 57°52'N, 134°16'W | C | Vein | Au,Cu | Three lode claims | Lathram and others, 1965, p. R44, loc. nos. 10, 11 | V |
| 106 | Windfall Harbor | 57°51'N, 134°19'W | C | Lode | Cu | Twenty-three lode claims | | -- |
| 106a | -- | 57°48'30"N, 134°22'W | O | Dissem | REE | Niobian rutile crystals up to 10 cm long in felsic pegmatite veins in migmatite and gneiss | Lathram and others, 1965, p. R43, R45, loc. no. 49 | MUR |
| 107 | Hasselborg Lake | 57°40'N, 134°15'W | O | Massive | Ag,Au,Cu | Massive py and cp with a little qz in sheared and fractured chertlike metarhyolite(?); chip sample contained 2% Cu and 0.04 oz Au and 0.66 oz Ag per ton | Lathram and others, 1965, p. R44, loc. no. 21 | VM |
| 108 | Ebba | 57°40'N, 134°14'W | P | Float | Ag,Au,Cu, Ni | Gabbro float containing po and cp. Assays showed 0.03% Cu, 0.16% Ni, and 0.02 oz Au and 1.18 oz Ag per ton | | MOS |
| 109 | Gambier Bay (Cook) | 57°32'N, 134°03'W | P | Vein(?) | Au,Cu | Cu- and Au-bearing veins(?) in limestone(?) | | V(?) |
| 110 | Gambier Bay (Brown) | 57°30'N, 134°07'W | P | Dissem | Au,Cu | Limestone partly replaced by qz and small masses of py and cp; low Au values reported in early 1900's | | DS(?) |
| 111 | -- | 57°22'N, 134°26'W | C | -- | Au | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|---|
| 112 | N. central Admiralty Is. (Pyrola) | 57°58'N, 134°32'W | P | Stratiform: massive; dissem | Ag,Au,ba, Zn | Volcanogenic massive sulfide deposit. Hostrocks are Upper Triassic(?) interbedded felsic or intermediate flows and tuff; carbonaceous siltstone and argillite; and limestone and dolomite. Deposit consists of interbedded massive sulfides and ba, and a siliceous, disseminated, stockwork py zone containing significant Ag and Au. Sulfide minerals are py, sl, gn, and minor cp, jamesonite, and boulangerite. Massive deposit is underlain by a chlorite-carbonate alteration halo overprinted by intense sericite-py-qz alteration. Discovered in 1954, privately drilled | Van Nieuwenhuyse, 1984 | | VM |
| 113, 114 | Deleted | | | | | | | | |
| 115 | -- | 57°59'N, 134°34'W | O | Dissem (D) | *Co(?),Cu, Zn | Py, cp, ml in laminated quartzite, marble, and schist | Lathram, et al., 1965, Table 2, | No. 46 | DS |
| 116 | -- | 57°58'N, 134°39'W | O | Vein (V) | Cu,Pb(?), Zn | Py, cp in qz veins in rust-weathering qz-musc(?) schist. Minor Cu-stain | do | No. 43 | V |
| 117 | -- | 57°58'N, 134°33'W | O | D | Zn | Disseminated py cubes in qz-musc(?) schist | do | No. 45 | DS |
| 118 | -- | 57°59'N, 134°32'W | O | V | Cu | Py, cp, po(?) veinlets in marble and calcareous greenschist | do | No. 44 | V |
| 119 | -- | 57°57'N, 134°36'W | O | V(?) | Cu | Py crystals in greenschist inclusion in qz lens in schist | do | No. 42 | V(?) |

*"Resources" at localities 115-141 detected by X-ray spectrographic examination

SITKA QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|---|
| 120 | -- | 58°00'N, 134°06'W | 0 | D | Zn | Py crystals in bleached actinolitic greenstone | do | No. 16 | DS |
| 120a | -- | 57°49'N, 134°04'W | 0 | V | Zn(?) | Po veinlets in greenstone | do | No. 41 | V |
| 121 | -- | 57°55'N, 134°30'W | 0 | V, D | ba,Co,Zn | Py crystals, veinlets in brown-weathering quartzite or chert, phyllite, schist | do | No. 48 | V, DS |
| 121a | -- | 57°47'N, 134°24'W | 0 | D | Mo(?),Zn | Mag, po in schistose greenstone | do | No. 32 | DS |
| 122 | -- | 57°55'N, 134°29'W | 0 | D | -- | Disseminated py in quartzite and mica schist | do | No. 47 | DS |
| 123 | -- | 57°42'N, 134°42'W | 0 | V | Cu | Py- and cp-rich pods in amphibolite near contact with plutonic rock | do | No. 40 | V |
| 124 | -- | 57°41'N, 134°42'W | 0 | V | Cu,Zn | Py, cp in calc and qz veinlets in mica schist | do | No. 39 | V |
| 125 | -- | 57°40'N, 134°32'W | 0 | D | Cu,Zn | Sparse cp, py in schistose greenstone | do | No. 53 | DS |
| 126 | -- | 57°42'N, 134°21'W | 0 | D | -- | Disseminated py in bt(?)-hnbd schist | do | No. 52 | DS |
| 127 | -- | 57°41'N, 134°21'W | 0 | D | Cu,Zn | Veinlets and disseminated grains of py, cp in Fe-stained sheared and brecciated hornfels | do | No. 28 | DS |
| 128 | -- | 57°39'N, 134°06'W | 0 | V | -- | Sparse py veinlets in chert | do | No. 13 | V |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 129 | -- | 57°41'N, 134°05'W | 0 | D | -- | Disseminated py, po in siliceous greenstone or hornblendite | do No. 14 | MOS(?) |
| 130 | -- | 57°41'N, 134°03'W | 0 | D | Cu | Disseminated po, py, cp in rust-weathering siliceous hornfels | do No. 15 | DS |
| 131 | -- | 57°38'N, 134°00'W | 0 | V | ba,Co(?), Cu(?) | Qz-py-cp(?) veins as much as 1 in. thick in fractured diabase(?) | do No. 19 | V |
| 132 | -- | 57°37'N, 134°17'W | 0 | D | Cu,Zn | Veinlets and disseminated grains of py, cp in schistose serpentinous greenstone | do No. 30 | DS |
| 133 | -- | 57°36'N, 134°09'W | 0 | V | ba,Zn | Po, py veinlets in sheared mafic volcanic rock | do No. 23 | V |
| 134 | -- | 57°32'N, 134°24'W | 0 | D | Zn | Disseminated py, mag, po(?) in greenstone | do No. 55 | DS |
| 135 | -- | 57°30'N, 134°17'W | 0 | D | Zn | Disseminated mag in mafic igneous rock | do No. 54 | MOS(?) |
| 136 | -- | 57°29'N, 134°15'W | 0 | D | Co(?),Zn | Disseminated py, po in biotite hornfels | do No. 29 | DS |
| 137 | -- | 57°28'N, 134°15'W | 0 | D | Ni(?) | Po, py, mag in porphyritic igneous rock | do No. 33 | DS |
| 138 | -- | 57°28'N, 134°14'W | 0 | D | Mo(?),Zn | Disseminated py, po in foliated plutonic rock | do No. 34 | DS |
| 139 | -- | 57°29'N, 134°05'W | 0 | V | Cu | Cp, po in qz- and calc-cemented silicified limestone breccia | do NO. 35 | V |

SITKA QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 140 | -- | 57°18'N, 134°34'W | Q | D | Cu,Zn | Sparse cp, py, in schistose greenstone | do No. 37 | DS |
| 141 | -- | 57°18'N, 134°35'W | Q | D | ba,Sb(?), Zn(?) | Small py crystals in brecciated chert | do No. 18 | DS |

SKAGWAY QUADRANGLE
(latitude 59°-60°N; longitude 135°-138°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | [11]/BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1 | North of Margerie Glacier | 59°02'N, 137°06'W | D | Stain; dissem | Unknown | Fe-stained zones in fine-grained clastic rocks contain about 1% po | | -- |
| 2 | Margerie Glacier | 59°01'N, 137°05'W | P | Vein; massive; dissem | Ag,Au,Cu, Mo,W,Zn | Porphyry Cu deposit. Qz veins, mineralized shear zones, po-rich massive sulfide bodies, and sulfides disseminated in hydrothermally altered Tertiary porphyritic quartz monzonite stock and in adjacent hornfels. Metallic minerals include cp, py, aspy, sl, po, and mo, accompanied by pow-sc, Au, and Ag. Estimated inferred resource is 160 million tons averaging 0.02% Cu, 0.008 oz Au and 0.13 oz Ag per ton, and 0.01% W | Brew and others, 1978, p. A6-A7, C149-C162 | P, V |

[11]/Geologic descriptions of deposits in the Skagway quadrangle are adapted mainly from summaries in one or more of the following general references: Berg and others (1981, p. 111-119), and Cobb (1972k, 1978e, 1981c, and 1981d). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claim map for the quadrangle (U.S. Bureau of Mines, 1978j).

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 3,4 | Tarr Inlet | 59°00'- 59°02'N, 137°00-137°03'W | O, P | Dissem; vein(?) | Ag,Au,Cu, Pb,Sn(?), W(?),Zn | Sheared and altered qz monzodiorite, xenoliths of hornfelsed country rocks, and plugs(?) of porphyritic granite contain py, cp, sl, and aspy. Samples of richer parts of deposit(s) contained as much as 3,300 ppm Cu, 5,000 ppm Zn, 3,100 ppm Pb, 50 ppm Ag, and 0.15 ppm Au. Bi, Sn, and W are reported in ss analyses | Brew and others, 1978, p. C162-C168, C-170 | V, P(?) |
| 5 | Mount Abdallah | 59°01'N, 136°51'W | O(?) | Dissem(?) | Cu(?), Ni(?) | Grab sample of Cu- and Fe-stained zone about 10 ft long and 6 ft wide in hornfels contained 100 ppm Cu and 70 ppm Ni | Brew and others, 1978, p. C189-C190 | V(?) |
| 6 | Rendu Glacier | 59°01'- 59°03'N, 136°47'-136°49'W | O | Stratiform(?): massive; vein | Ag,Au,Cu, W,Zn | Two-mile-long zone of discontinuous carbonate-calcsilicate lenses along intrusive contact between Paleozoic sedimentary rocks and Cretaceous(?) granitic rocks. Skarn deposits contain cp, po, sc, sl, Ag, and Au. One deposit of cp-rich sulfide estimated to contain about 4,300 tons averaging 0.5% W, 5.0% Cu, and 7 oz:g and 0.25 oz Au per ton | MacKevett and others, 1971, p. 4, 40, 43; Brew and others, 1978, p. C180-C186 | S |
| 7 | Deleted | | | | | | | |
| 8 | West of Riggs Glacier | 59°10'N, 136°20'W | O | Massive(?) | -- | Sulfide band 5-10 ft wide | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 9 | Mt. Brock | 59°07'N, 136°17'W | D | Vein; dissem(?) | Ag,Au,Cu, Pb,Zn | Sl, gn, cp, sulfosalt, and a little Ag and Au in 6-8 in. thick veins and in altered zones in graywacke, limestone, hornfels, and mafic dikes. Sb, As, and Cd determined by ss analyses | MacKevett and others, 1971, p. 4, 40, 53-55; Brew and others, 1978, p. C319-C324 | V |
| 10 | Minnesota Ridge | 59°01'N, 136°16'W | D | Vein | Ag(?),Au, Cu,Mo(?) | Py, cp, and secondary Cu and Fe minerals occur along joints in quartz diorite. Samples contained as much as 700 ppm Cu, 0.7 ppm Ag, 0.10 ppm Au, and 30 ppm Mo | Brew and others, 1978, p. C313-C315 | V, P(?) |
| 11 | Muir Inlet | 59°01'N, 136°10'W | C | Lode | Fe | Lode claims | | -- |
| 12 | South end of White Thunder Ridge | 59°00'N, 136°09'W | P | Unknown (lode) | Fe | Two Fe claims, 1965 | | -- |
| 13 | Van Horn Ridge | 59°01'N, 136°06'W | P | Unknown (lode) | Mo | 63 claims staked for Mo in 1965 | | P(?) |
| 14 | Van Horn Ridge | 59°00'N, 136°05'W | P | Dissem; vein(?) | Cu(?),Mo | Fe-stained breccia and shear zones 1-12 ft thick in shale, hornfels, and granodiorite. Samples of altered material contained up to 200 ppm Mo and 150 ppm Cu. Pits and trenches | | P(?) |

SKAGWAY QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 15 | McBride Glacier | 59°06'N, 136°04'W | D | Dissem(?) | Ag,Au,Cu | Ankeritic zones up to 2 ft thick and 100 ft long contain aspy, cp, po, py, and small amounts of Au and Ag. Zones are conformable with bedding near facies change between marble and phyllite. Samples contained as much as 0.087 oz Au per ton and 15 ppm Ag. Five-ft thick andesite dike also contains cp and py | | DS(?) |
| 16 | Casement Glacier | 59°03'N, 135°57'W | D | Float | Cu,Mo | Mo and secondary Cu minerals in float on lateral moraines | | -- |
| 17 | Hayes | 59°02'N, 135°24'W | P | Dissem(?) | Cu,Fe | Prospect on a cliff at the head of a talus slope that contains float blocks of marble carrying mag, cp, and hem | | S(?) |
| 18 | -- | 59°12'N, 136°04'W | D | Dissem | Mo | Mo disseminated in granodiorite(?) | | P(?) |
| 19 | -- | 59°13'N, 135°52'W | D | Dissem | Cu(?) | Cp(?) disseminated in hornfels | | DS |
| 20 | Chilkat Peninsula | 59°12'N, 135°22'W | D | Dissem(?) | Cu | Cp-bearing greenstone or amphibolite | | DS(?) |
| 21 | South of Port Chilkoot | 59°13'N, 135°25'W | C | Lode | Au,Fe | Lode claims | | -- |
| 22 | Haines | 59°15'N, 135°29'W | P | Dissem | Fe,Ti | Magmatic segregations of disseminated Ti-mag in pyroxenite. Resource estimated at several billion tons of material containing up to 10% magnetite. 100-ft tunnel driven in about 1906 | Knopf, 1910b, p. 144-146; Eakin, 1919, p. 27-29; Robertson, 1956, p. 24-27 | MOS |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 23 | South of Mt. Ripinski | 59°15'N, 135°31'W | C | Lode | Fe | Lode claims | | -- |
| 24 | Upper Chilkat Inlet | 59°16'N, 135°35'W | C | Lode | Fe | Lode claims | | -- |
| 25 | Mt. Ripinski | 59°16'N, 135°31'W | O | Dissem | Fe | Magmatic segregations of Ti-mag disseminated in mafic and ultramafic rocks | | MOS |
| 26 | Taiasanka Harbor | 59°19'N, 135°24'W | C | Lode | RA | Lode claims | | -- |
| 27 | Ridge NE of Chilkoot Lake | 59°21'N, 135°32'W | C | Lode | Cu | Lode claims | | -- |
| 28 | Takshanuk Mtns. | 59°20'N, 135°40'W | O | Vein | Cu | Bn and hem reported | | V |
| 29 | Mouth of Chilkat River | 59°19'N, 135°43'W | C | Placer | Au,Cu | Placer claims | | Placer |
| 30 | Takhin River | 59°16'N, 136°08'W | O | Placer | Au | Au-bearing gravels | | Placer |
| 31 | Cottonwood Creek | 59°17'N, 136°12'W | P(?) | Placer | Au | Placer Au discovered in 1899; no data on production | | Placer |
| 31 | Salmon River (Tsirku River) | 59°17'- 59°18'N, 136°11'-136°12'W | M | Placer | Au | Au in bench gravels and river bars mined in early 1900's | | Placer |
| 32 | Nugget Creek | 59°18'N, 136°11'W | M | Placer | Ag,Au | About 300 fine oz of Au recovered from stream or bench placers in early 1900's | | Placer |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 33 | Cottonwood Creek | 59°18'N, 137°13'W | C | Placer | Au | Au placer claims | | Placer |
| 34 | Tsirku River | 59°19'N, 136°27'W | O | Float | Pb,Zn | Float sample of vein qz near head of river contained gn and sl | | -- |
| 35 | Summit Creek | 59°20'N, 136°05'W | P(?) | Vein | Ag,Au,Cu, Pb | Numerous gn veinlets in metasedimentary(?) rocks. Assays show up to about 60 oz Ag and 0.145 oz Au per ton, and about 35% Pb and 3% Cu | Eakin, 1919, p. 14-15, 18 | V |
| 36 | Saksaia Glacier | 59°22'N, 136°25'W | O | Vein | Ag,ba,Cu, Pb,Zn | Qz, calc, py, ba, cp, gn, sl, and probably sulfosalts in altered fault(?) zone in metavolcanic rocks. Assays show as much as 500 ppm Ag. Hawley (1976) describes this deposit as an epigenetic alteration pipe beneath a stratiform syngenetic ba-sulfide deposit | MacKevett and others, 1974, p. 25-27, 29; Hawley, 1976, p. T7; Still, 1984 | V, MS(?) |
| 37a | -- | 59°23'N, 136°25'W | C | Lode | Au,Cu,Pb | Lode claims near Saksaia Glacier | | -- |
| 37b | -- | 59°24'N, 136°23'W | C | Lode | Au,Cu,Pb | Lode claims near toe of Saksaia Glacier and Glacier Creek | | -- |
| 38 | Stampede | 59°27'N, 136°29'W | P | Vein(?) | Au(?) | Exploration of gold lode claims in 1929. Work may have been in Canada | | V(?) |

SKAGWAY QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 39 | Glacier Creek | 59°24'N, 136°23'W | P | Stratiform: massive | Ag,Au,ba, Cu,Pb | Stratiform layers and lenses of barite and massive and disseminated sl, gn, cp, py, mag, td, and possibly other sulfosalts in a sequence of Upper Triassic(?) mafic pillow flows and subordinate felsic volcanic rocks and fine-grained clastic and carbonate rocks. According to Bundtzen (1984, p. 43), deposit reportedly consists of a 48- to 60-ft thick zone of 60% ba with a 2- to 8-ft thick basal zone of massive sulfides that contains 2% Pb, 3% Zn, 1% Cu, 2-4 oz Ag/ton and 0.12 oz Au/ton | Hawley, 1976, p. T6-T7; Still, 1984 | VH |
| 40 | Glacier Creek | 59°24'N, 136°21'W | O | Float | -- | Float samples from lode at No. 39 | | -- |
| 41 | Glacier Creek | 59°24'- 59°25'N, 136°18-136°20'W | M | Placer | Au | Placer Au at bases of two fluvioglacial gravel deposits. Mined in early 1900's | Eakin, 1919, p. 21-23 | Placer |
| 42 | Mouth of Glacier Creek | 59°25'N, 136°18'W | C | Placer | Au | Patented placer Au claims | | Placer |
| 43 | Klehini River | 59°25'- 59°27'N, 136°13'-136°21'W | M | Placer | Au | Placer Au near mouths of Jarvis and Porcupine Creeks. A little mining for dredging tests in 1930's | | Placer |
| 44 | Porcupine Creek | 59°25'N, 136°14'W | C | Placer | Au | Placer Au claims | | Placer |
| 45 | Porcupine Creek | 59°25'N, 136°14'W | C | Placer | Au | Patented placer Au claim | | Placer |
| 46 | Porcupine Creek | 59°25'N, 136°14'W | C | Placer | Au | Patented placer Au claim | | Placer |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 47 | Porcupine Creek | 59°25'N, 136°15'W | C | Placer | Au | Patented placer Au claim | | Placer |
| 48 | Porcupine Creek | 59°24'N, 136°15'W | C | Placer | Au | Patented placer Au claim | | Placer |
| 49 | Marble Creek | 59°24'N, 136°16'W | M(?) | Placer(?) | Au(?) | A little gold may have been mined in 1929 | | Placer |
| 50 | Grizzly Creek | 59°24'N, 136°15'W | 0 | Placer(?) | Au(?) | Claims were staked in about 1900 | Wright, 1904a, p. 12; Cobb, 1978e, p. 86 | Placer |
| 51 | Cahoon Creek | 59°23'N, 136°14'-136°15'W | 0 | Dissem; placer | Au | Placer mining near mouth of creek in early 1900's. Sample of py-bearing slate contained 0.02 ppm Au | Eakin, 1919, p. 22, 24-25 | DS, Placer |
| 51 | McKinley Creek | 59°23'- 59°24'N, 136°14'-136°15'W | M | Placer; dissem | Au | Stream and bench placers mined in early 1900's. Slate bedrock contains disseminated py and many py-bearing qz-calc veins. Sample of pyritic slate contained 0.12 oz Au per ton | Eakin, 1919, p. 21-25 | DS, Placer |
| 51 | Porcupine Creek | 59°24'- 59°25'N, 136°14'-136°15'W | M | Placer; vein; dissem | Au,Cu,Pb, Zn | About 60,000 oz of placer Au recovered from creek, bench, and old channel deposits in early 1900's. Bedrock is mainly slate containing disseminated py and numerous qz-calc veins, some of which may contain sl. Sample from apparently barren qz veins assayed 0.25 oz Au per ton | Wright, 1904a, p. 15-24; Mackevett and others, 1974, p. 20-21, 24 | Placer, V, DS |
| 52 | -- | 59°24'N, 136°15'W | C | Placer | Au | Placer Au claims on Porcupine and McKinley Creeks | | Placer |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 53a | -- | 59°23'N, 136°14'W | C | Placer | Au | do | | Placer |
| 53b | -- | 59°24'N, 136°15'W | C | Placer | Au | do | | Placer |
| 54 | -- | 59°24'N, 136°14'W | C | Lode | Au,Cu,Pb | Lode Au claim probably in metamorphic and dioritic rocks containing cp and gn | | -- |
| 55 | -- | 59°24'N, 136°14'W | C | Placer | Au | Placer Au claims along Porcupine Creek | | Placer |
| 56 | -- | 59°23'N, 136°14'W | C | Placer | Au | Patented placer Au claim on McKinley Creek | | Placer |
| 57 | -- | 59°23'N, 136°14'W | C | Placer(?) | Au | Au placer(?) claim on Cahoon Creek | | Placer(?) |
| 58 | -- | 59°23'N, 136°15'W | C | Lode | Au | Lode Au claims probably in metamorphic and dioritic rocks along Cahoon Creek | | -- |
| 59 | -- | 59°23'N, 136°13'W | C | Lode | Au | Lode Au claims probably in metamorphic and dioritic rocks along McKinley Creek | | -- |
| 60 | -- | 59°23'N, 136°13'W | C | Placer | Au | Placer Au claims on McKinley Creek | | Placer |
| 61 | -- | 59°22'N, 136°12'W | C | Lode, placer | Au | Lode and placer Au claims along McKinley Creek | | Placer |
| 62 | Big Boulder Creek | 59°26'N, 136°14'W | O | Placer | Au | Small placer Au deposits | | Placer |
| 63 | -- | 59°26'N, 136°12'W | C | Lode | Fe | Lode Fe claims near mouth of Boulder Creek | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 64 | -- | 59°26'N, 136°09'W | C | Lode | RA | Three lode claims along the Klehini River near Little Boulder Creek | | -- |
| 65 | -- | 59°25'N, 136°09'W | C | Placer | Au | Placer Au claim on south side of Klehini River opposite the mouth Little Boulder Creek | | Placer |
| 66 | -- | 59°26'N, 136°08'W | C | Lode | Au,Cu,Pb | Lode claims near the mouth of Little Boulder Creek | | -- |
| 67,68 | Klukwan | 59°24'- 59°26'N, 135°50-135°55'W | P | Dissem; placer | Cu,Fe,Pt, Ti,V | Magmatic segregation of disseminated titaniferous mag and minor cp, hem, py, and po in pyroxenite. Estimated resource is several billion tons of material averaging 13-20% magnetic Fe and 1.6-3.0% Ti. Analyzed samples contained 0.1-0.29% V and as much as 0.11% P, 0.03% S, 0.03% Ni. Of 10 samples of pyroxenite, 7 averaged 0.046 ppm Pt, and 7 averaged 0.040 ppm Pd. A fan below the pyroxenite body contains an estimated 500 million tons of detrital pyroxenite with an average mag content of 10%. Some sampling for metallurgical testing | Robertson, 1956, p. 10-24, 28-36; MacKevett and others, 1974, p. 18, 24-25 | MOS (68) Placer (67) |
| 69 | -- | 59°25'N, 135°40'W | C | Placer | Au | Placer Au claim on tributary of the Chilkoot River | | Placer |
| 70 | -- | 59°26'N, 135°20'W | C | Lode | RA | -- | | -- |
| 71 | -- | 59°26'N, 135°19'W | C | Lode | RA | -- | | -- |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 72 | -- | 59°27'N, 135°19'W | C | Lode | RA | -- | | -- |
| 73 | -- | 59°27'N, 135°19'W | C | Lode | RA | -- | | -- |
| 74 | -- | 59°29'N, 135°21'W | C | Lode | RA | -- | | -- |
| 75 | -- | 59°28'N, 135°17'W | C | Lode | RA | -- | | -- |
| 76 | Skagway | 59°29'N, 135°17'W | P | Dissem | U | Traces of U or other radioactive minerals in fractures in Fe-stained, altered rhyolite(?) intrusive body, and possibly disseminated in the intrusive. Analyses of grab(?) samples show up to 0.72% eU (1.2% U) | | MUR |
| 77 | -- | 59°30'N, 135°16'W | C | Lode | RA | -- | | -- |
| 78 | -- | 59°30'N, 135°16'W | C | Lode | RA | -- | | -- |
| 79 | -- | 59°30'N, 135°16'W | C | Lode | Au | -- | | -- |
| 80 | Clifton | 59°31'N, 135°13'W | P | Dissem; vein | Mo | Leucocratic granite contains approximately 1% disseminated mo that is locally concentrated along joints. 15 ft shaft and 30 ft long tunnel driven in early 1900's; no production | Smith, 1942b, p. 180-181 | P |
| 81 | -- | 59°28'N, 135°12'W | C | Lode | Au | Lode Au claims near Twin Dewey Peak | | -- |

SKAGWAY QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 82 | -- | 59°26'N, 135°07'W | C | Lode | Au | Lode Au claim near Denver Glacier | | -- |
| 83 | -- | 59°35'N, 135°10'W | C | Lode | Ag,Au,Pb | Lode claim south of White Pass | | -- |
| 84 | Inspiration Point | 59°37'N, 135°08'W | M | Vein(?); dissem | Ag,Au(?), Cu,Pb,Zn | Qz diorite contains small lenses and masses of argentiferous gn, probably other sulfides, and possibly Au. A few tons of ore containing Ag, Au(?), Pb, Zn, and Cu reportedly produced in early 1900's | | V, P(?) |
| 85 | Clear Creek (Bear Creek) | 59°32'N, 136°06'W | P | Placer | Au(?) | A little Au may have been found in 1900 | | Placer |
| 86 | -- | 59°33'N, 136°05'W | C | Lode | Cu | Lode Cu claim near the confluence of Nataga Creek and the Kelsall River | | -- |
| 87 | Bear Creek | 59°33'N, 136°09'W | P | Vein | Cu,Zn | Specimen of a qz vein a few inches thick from ridge west of the creek contained py, po, cp, and sl | | V |
| 88 | -- | 59°34'N, 136°09'W | C | Lode | Cu,Zn | Lode claim west of the Kelsall River | | -- |
| 89 | Mt. Barnard Nunatak | 59°05'N, 136°54'W | O | Vein(?); dissem(?) | Ag,Au,Cu | Pods up to 0.5 ft thick of po, py, and a trace of cp associated with andesite, greenstone, and marble. Grab sample of pod contained 1,000 ppm Cu, 0.1 ppm Au, 0.5 ppm Ag, and 100 ppm Co | | V(?), DS(?) |
| 90 | Upper Carroll Glacier | 59°06'N, 136°47'W | O | Dissem(?) | Unknown | Fe-stained banded gneiss | | -- |

SKAGWAY QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 91a,b | Gable Mtn. | 59°04'N, 136°34'W | D | Vein; dissem | Ag,Cu,Mo, W | 91a: Fe-stained sulfide-coated joints in qz diorite; 7 grab samples ranged in assay value up to 970 ppm Cu, 3 ppm Ag, 200 ppm Mo, and 150 ppm W. 91b: Secondary Cu minerals in diorite and Cu-stained qz diorite float in talus below 0.7 ft wide shear zone with qz stringers and Cu stains; analyses of samples showed traces to 7 ppm Ag, 250-8,000 ppm Cu, and traces of Mo | Brew and others, 1978, p. C317-C318 | P(?) |
| 92 | Casement Glacier moraine | 59°00'N, 135°58'W | D | Float | Cu | Approximately 5% cp in boulders of skarn in moraine | | -- |

SUMDUM QUADRANGLE
(latitude 57°-58°N; longitude 132°-134°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | 12/BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1 | Crystal | 57°58'N, 133°48'W | M | Vein | Au | Qz fissure vein averaging 4 ft thick in amphibolite contains py and free Au, some of which occurs as crystals on pyrite lining vugs. At least 2,000 oz Au mined in early 1900's | | V |
| 2 | Friday | 57°59'N, 133°46'W | M | Vein | Au,Fe | Qz fissure(?) vein 1-6 ft wide in altered slate near diorite intrusive contains mag, and auriferous py. Production in early 1900's combined with that of Crystal mine. Two tunnels 750 ft and 600 ft long | | V |
| 2a | Snettisham | 57°59'N, 133°46'W | P | Dissem; massive | Cu,Fe,Pt, Ti,V | Magmatic segregations in pyroxenite of massive and disseminated titaniferous mag accompanied by minor po, cp, and il. Estimated resources are 500,000 tons averaging about 18.9% Fe and 2.6% Ti (Bundtzen, 1984, p. 43), and about 0.7% $V_2O_5$, and 0.0027 oz of Pt-group metals per ton. Drilling and other testing by USBM. | Thorne and Wells, 1956 | MOS |

12/Geologic descriptions of deposits in the Sumdum quadrangle are adapted mainly from summaries in one or more of the following general references: Berg and others (1981, p. 120-125), and Cobb (1972) and 1978i). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claim map for the quadrangle (U.S. Bureau of Mines, 1978k).

SUMDUM QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 3 | -- | 57°58'N, 133°42'W | C | Lode | Ag,Au,Cu | -- | | -- |
| 4 | Sweetheart Lake | 57°58'N, 133°38'W | O, P(?) | Vein(?) | Au,Pb | Au- and gn-bearing qz in schist | | V, MS(?) |
| 5 | Gold Nest | 57°57'N, 133°36'W | P | Vein | Ag,Au(?) | 3-ft thick brecciated pyritic qz vein in schist(?) contains a little Ag. AA analyses showed as much as 7.0 ppm Au | | V |
| 6 | -- | 57°57'N, 133°30'W | O | Vein | Cu,Mo | Traces of mo and cp in chip sample across a heavily iron-stained qz pod parallel to foliation of gneiss. SS analyses showed 100 ppm Mo and 200 ppm Cu | | DS |
| 7 | Arm | 57°56'N, 133°35'W, | O | Stain; float | Cu,Pb,Zn | Fe-stained gneiss in a steep gorge. Float sample contained 230 ppm Cu, 400 ppm Zn, and 15 ppm Pb | | DS |
| 8 | Sweetheart Ridge | 57°55'N, 133°37'W | O | Massive; dissem | Ag,Au,Cu, Pb,Zn | Massive layers up to 6 ft thick and disseminated grains of cp, py, sl, and gn are partly conformable with compositional layers in schist and paragneiss hostrocks, and partly in veins or other lodes that at least partly postdate the layers. Estimated resource per 100 ft of depth for zone 147 ft long and 5.5 ft wide is about 7,300 tons of material with average grade of 0.23 oz Au and 0.31 oz Ag per ton and 0.7% Cu. Private drilling in 1980's | Brew and others, 1977, p. 192-199, 258 | MS |

SUMDUM QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 9 | Tracy Arm | 57°55'N, 133°34'W | P | Massive; dissem | Ag,Au,Cu, Pb,Zn | Conformable layers up to 10 ft thick of massive and disseminated po, sl, cp, and gn in steeply-dipping paragneiss. 16-ft shaft and numerous opencuts in early 1900's. Sampling by USBM in 1970's indicates 187,000 tons of material averaging 3.42% Zn, 1.42% Cu, 0.43 oz Ag per ton, and 0.008 oz Au per ton. Channel samples contained up to 12% Zn, 5.7% Cu, 1 ppm Au, and 52.4 ppm Ag. No record of any production | Gault and Fellows, 1953; Brew and others, 1977, p. 4, 128-129, 200-203, 258-259 | MS |
| 10 | Sawyer Glacier | 57°57'N, 133°04'W | O | Dissem(?) | Au,Mo | A 30 ft channel sample across stained gneiss contained 0.10 ppm Au. Another sample contained 10-30 ppm Mo | | DS |
| 11 | Meigs Peak | 57°51'N, 133°42'W | O | Dissem(?) | Ag,Au,Pb, Zn | Sediments in streams draining Meigs Peak contain geochemically anomalous amounts of Ag, Au, Pb, and Zn | | DS(?) |
| 12 | Point Coke | 57°47'N, 133°42'W | O | Vein | Cu(?) | Sample in early 1900's of a qz-feldspar vein contained 300 ppm Cu | | V |

SUMDUM QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 13,14 | Sumdum | 57°47'- 57°48'N, 133°27'-133°28'W | P | Dissem; massive; vein | Ag,Cu,Pb, Zn | Conformable lenses up to 50 ft thick of massive and disseminated po, py, cp, sl, and lesser amounts of bn, cc, ml, az, and gn in complexly folded paragneiss. Some of the sulfides also occur in veins(?) and in fault breccia that at least partly postdate the conformable deposits. Estimated by USGS to tain about 26,700,000 tons of material with an average content of 0.57% Cu, 0.37% Zn, and 0.3 oz Ag per ton. Diamond drilled and trenched by private interests in 1950's | MacKevett and Blake, 1964; Brew and others, 1977, p. 4, 128-129, 205-212, 258-259 | MS |
| 15 | Powers Creek | 57°46'N, 133°30'W | M | Placer | Au,Cu | About 2,000 oz of Au recovered from placers in late 1800's. Assays of pan samples collected in 1970's by USBM indicated up to 0.0031 oz Au per cubic yard | | Placer |
| 16 | Deleted | | | | | | | |
| 17 | Point Astley | 57°42'N, 133°38'W | P | Massive; dissem; vein | Ag,Cu,Pb, Zn | Conformable massive lenses and disseminations of py, sl, gn, cp,, bn, cc, cv, po, ml, and Ag in phyllite and musc-qz-feldspar schist. Some of the sulfides also occur in qz stringers that at least partly postdate the conformable deposits. Assays by USBM in 1970's show up to 159.1 ppm Ag, 5,800 ppm Cu, 11,000 ppm Pb, and 90,000 ppm Zn. Three shafts, several crosscuts, and two adits driven in early 1900's | Buddington, 1925, p. 131-133;W, MS Herreid, 1962, p. 56-58; Race, 1962, p. 68-71; Brew and others, 1977, p. 6-7, 127, 138-142, 263-264 | |

SUMDUM QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 18 | Bushy Islands | 57°43'N, 133°26'W | O | Vein | Ag,Cu,Zn | Cu-stained qz stringers up to 1.5 ft thick in phyllite locally contain traces of cp, sl, and ml. Chip sample of phyllite and qz stringers contained 700 ppm Cu, 1,600 ppm Zn, and 0.015 oz Ag per ton | | V |
| 19 | Portland | 57°41'N, 133°22'W | P | Dissem; vein | Ag,Au,Cu, Pb,Zn | Py, po, gn, sl, and cp occur as stringers and disseminations parallel to foliation of Fe-stained qz-mica schist. Sampling by USBM in 1970's showed up to 0.10 ppm Au, 10 ppm Ag, 930 ppm Cu, 1,800 ppm Pb, and 3,400 ppm Zn. 365 ft of workings in 3 adits around 1900. Early assays showed up to $3.00 Au per ton | Herreid, 1962, p. 48; Race, 1962, p. 68-71; Brew and others, 1977, p. 215-217 | MS |
| 20 | Fords Terror area | 57°43'N, 133°08'W | O | Dissem | Mo,Zn | Chip samples of Fe-stained pelitic paragneiss containing disseminated sulfides showed up to 300 ppm Zn, 30 ppm Mo | | DS |
| 21 | Sumdum Chief | 57°39'N, 133°27'W | M | Vein | Ag,Au,Cu, Pb,Zn | Qz-calc fissure veins as much as 20 ft thick in graphitic limestone contain free Au, auriferous py, gn, sl, cp, and aspy. Mining in early 1900's produced about 24,000 oz of Au and probably about the same amount of Ag. Ore averaged about 0.4 oz Au per ton. 3,500 ft tunnel | Brew and others, 1977, p. 3, 6-7, 129-130, 176-182 | V |
| 22 | -- | 57°36'N, 133°26'W | C | -- | Cu | -- | | -- |

SUMDUM QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 23 | Holkham Bay | 57°38'N, 133°22'W | M | Vein; dissem | Ag,Au,Cu Pb | Qz veins up to 6 ft thick in schist. Veins and included country rock carry gn, py, aspy, cp, and free Au. Probably about 50 oz of Au produced in early 1900's from 170 ft drift and 3 raises. Assays by USBM in 1970's averaged 0.094 oz Au per ton | Brew and others, 1977, p. 166-168 | V, DS |
| 24 | Jackpot | 57°36'N, 133°23'W | O | Vein | Au | Gold- and sulfide-bearing qz veins in black slate | | V |
| 25 | Bluebird | 57°36'N, 133°23'W | P | Vein | Ag,Au,Cu, Pb,Zn | Qz vein 1.6 ft thick in graphitic schist contains py, sl, cp, gn, Au, and Ag. About 400 ft of underground workings in early 1900's. No reported production | Brew and others, 1977, p. 183-186 | V |
| 26 | Sulphide | 57°37'N, 133°16'W | P | Massive | Ag,Au,Cu, Pb,Zn | Conformable layers 5-15 ft thick of massive sl, gn, cp, po, aspy, and ms in folded paraqneiss and "quartzite". Channel samples by USBM in 1970's indicate as much as 30 ppm Ag, 0.15 ppm Au, 2,500 ppm Cu, 13,000 ppm Pb, and 19,000 ppm Zn. Fire assays showed as much as 0.3 ppm Au and 43.9 ppm Ag | Brew and others, 1977, p. 219-221 | MS |
| 27 | Windham Bay (lodes) | 57°36'N, 133°21'W | M | Vein; dissem | Ag,Au,Cu Pb,Zn | 27-30: Qz fissure veins up to about a foot thick in schist and phyllite contain Au, py, sl, gn, and cp. Sulfides also are disseminated in the country rocks. Probably about 3,000 oz of Au produced in early 1900's from many underground and surface workings. Average Au content probably about 0.25 oz per ton | Spencer, 1906, p. 38-43; Buddington, 1925, p. 125-127; Brew and others, 1977, p. 6-7, 107, 143-162, 169-175, 263-264 | V, DS (27) V (28) V, DS (29, 30) |
| 28 | do | 57°36'N, 133°20'W | M | do | do | | | |
| 29 | do | 57°36'N, 133°20'W | M | do | do | | | |

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 30 | do | 57°36'N, 133°18'W | M | do | do | | | |
| 31 | Spruce Creek | 57°36'N, 133°20'W | M | Placer | Au | 31-35: Probably small amount of Au produced late 1800's-1950's from placers in basins between the lode deposits | | Placer (31-35) |
| 32 | Spruce Creek | 57°36'N, 133°19'W | M | Placer | do | | | |
| 33 | Sylvia Creek | 57°34'N, 133°20'W | M(?) | do | do | | | |
| 34 | Slate Creek | 57°33'N, 133°21'W | M(?) | do | do | | | |
| 35 | Chuck (Shuck) River | 57°30'N, 133°17'W | M(?) | do | do | | | |
| 28a | Windham Bay | 57°35'N, 133°23'W | O | Dissem | Fe | Magmatic segregation of disseminated mag and po(?) in pyroxenite. Chip sample contained 13.2% Fe | Brew and others, 1977, p. 162-165 | MOS |
| 36 | -- | 57°37'N, 133°08'W | O | Dissem(?) | Cu,Pb,W | Bedrock and float samples of metamorphic or granitic rocks contain traces of gn, po, cp, and sc | | S(?) |
| 37 | BBH | 57°32'N, 133°00'W | O | Dissem(?) | RA | Altered zones containing pegmatite lenses in granodiorite contain as much as 90 ppm eU (16.1 ppm U) | Eakins, 1975, p. 34-39; Brew and others, 1977, p. 235-236 | MUR |
| 38 | Kloss "Patty" | 57°29'N, 133°59'W | P | Dissem(?) | Ag,Cu,Ni, Pb,Zn | Reports in early(?) 1900's of Cu and Ni minerals in shear zones up to 200 ft wide in Upper Triassic strata. Hawley reports Ag, Pb, Zn, in volcanogenic stratiform deposit | Hawley, in AEIDC, 1982 | DS |

SUMDUM QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 39 | -- | 57°30'N, 133°57'W | C | Lode | Au | -- | | -- |
| 40 | -- | 57°30'N, 133°31'W | C | Lode | Au | -- | | -- |
| 41 | K&D | 57°29'N, 133°28'W | P | Vein | Ag,Au(?), Sb,Zn | Auriferous(?) qz fissure veins up to about 5 ft thick in phyllite or schist contain native Sb, minor sl, py, and td(?), and as much as 7 ppm Ag. Approximately 60-ft adit; possible minor Au production | | V |
| 42 | -- | 57°27'N, 133°17'W | C | Lode | Ag,Au | -- | | -- |
| 43 | -- | 57°25'N, 132°46'W | O | Dissem | Cu | Py and cp disseminated in paragneiss | | DS |
| 44 | -- | 57°21'N, 133°06'W | C | Lode | Cu | -- | | -- |
| 45 | Port Houghton | 57°19'N, 133°05'W | P | Vein | Au(?),Cu | Fissure vein 2-12 ft thick in shear zone in schist consists of intergrown po, py, mag, cp, qz, gr and amp. Sample across vein contained 1.34% Cu and possible traces of Au and Ni. Opencuts, adits, tunnel, and 115 ft drift. No record of any production | Buddington, 1925, p. p. 128-130 | V |
| 46 | -- | 57°21'N, 132°53'W | C | Lode | Ag,Au,Pb | -- | | -- |
| 47 | -- | 57°20'N, 132°45'W | O | Vein; dissem | Cu | Bn in aplite dike in qz and pegmatite veins, and in epidotized fracture | | V |

SUMDUM QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 48 | -- | 57°17'N, 132°49'W | D | Vein | Cu | Qz-ep-bn veinlet | | V |
| 49 | -- | 57°16'N, 132°43'W | D | Vein | Cu | Ep-qz-bn veinlet | | V |
| 50 | -- | 57°17'N, 133°30'W | C | Lode | Au,Zn | -- | | -- |
| 51 | -- | 57°16'N, 133°31'W | C | Lode | Au,Cu,Zn | -- | | -- |
| 52 | Colp & Lee | 57°05'N, 132°39'W | P(?) | Vein; dissem | Au,Cu,Pb, Zn | Qz stringers in a shear zone 140 ft wide in qz diorite contain py, gn, sl, and cp. Samples of shear zone reported to average about 0.145 oz Au per ton; 5.5 ft wide richest part reported to carry about 0.774 oz Au per ton | | V |

TAKU RIVER QUADRANGLE
(latitude, 58°-59°N; longitude, 132°-134°W)

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | 13/ BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 1 | -- | 58°43'N, 133°53'W | D | Lode | Pb,Zn | Lode claim active in 1959 | | -- |
| 2 | Boundary Creek | 58°39'N, 133°51'W | D | Dissem(?) | Ag,Mo | Mo disseminated(?) in qz diorite and aplite. Samples contain up to about 10 ppm Ag and 300 ppm Cu | Brew and Ford, 1969a, p. 12-15 | P(?) |
| 3 | Taku River | 58°34'N, 133°41'W | D | Vein | Ag,Au,Cu, Pb,Zn | Reports of veins in greenstone(?) containing s), po, py, gn, and cp, and of low assays for Au and Ag. No other data | | V |
| 4 | -- | 58°28'N, 133°26'W | D | Lode | Cu,Mo | Eight lode claims along International Boundary, 1961 | | -- |
| 5 | Mt. Brundage | 58°17'N, 133°21'W | D | Dissem | Cu | Fe-stained siliceous gneiss contains traces of cp and minor po | | DS |
| 6 | -- | 58°14'N, 133°27'W | D | Lode | Cu | Six lode claims, 1956 | | -- |
| 7 | -- | 58°05'N, 133°58'W | D | Lode | Au,Zn | Three lode claims near Steeple Peak, 1954-1975 | | -- |

13/ Geologic descriptions of deposits in the Taku River quadrangle are adapted mainly from summaries in one or more of the following general references: Berg and others (1981, p. 126), and Cobb (1972m and 1978l). Descriptions only of claims (CATEGORY C) are based on the U.S. Bureau of Mines claim map for the quadrangle (U.S. Bureau of Mines, 1977c).

TAKU RIVER QUADRANGLE

| MAP NO. | NAME OR SITE | COORDINATES | CATEGORY | FORM OF DEPOSIT | RESOURCES | BRIEF DESCRIPTION | ADDITIONAL REFERENCES | TYPE OF DEPOSIT |
|---|---|---|---|---|---|---|---|---|
| 8 | Sunrise Canyon | 58°05'N, | P | Vein or bed | Mn | Rhodochrosite and smaller amounts of manganite and (or) psilomelane, qz, and rhodonite occur in a vein or layer 1 to 3.5 ft thick parallel to foliation in phyllite. Surface exploration in 1930's | Pittman, 1957 | V(?) |
| 9 | Limestone Inlet | 58°03'N, 133°58'W | M | Vein | Au(?),Cu, Pb,Zn | Auriferous qz-veins up to 9 ft thick in granitic(?) rock contain small amounts of gn, sl, cp, py, and free Au. Some ore may have been produced in early 1900's from about 500 ft of underground workings | | V |
| 10 | Whiting River | 58°03'N, 133°27'W | M(?) | Vein | Ag,Au,Cu, Pb,Zn | Qz fissure veins up to about 5 ft thick in dolomite roof pendant in diorite contain aspy, py, po, gn, sl, and cp. Samples taken by USBM in 1970's contained as much as 57 ppm Au and 1,808 ppm Ag. Opencuts and 75 ft crosscut in early 1900's | Buddington, 1925, p. 135-136; Brew and others, 1977, p. 230-233 | V |