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Selected Significant Mineral Deposits in Alaska

A Minerals Availability System Overview

UNITED STATES DEPARTMENT OF THE INTERIOR

Information Circular 9177

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By Donald W. Baggs, Michael J. Northam, Mark P. Meyer, and Kenneth M. Maas

UNITED STATES DEPARTMENT OF THE INTERIOR
Donald Paul Hodel, Secretary

BUREAU OF MINES
T S Ary, Director

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environment and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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UNIT OF MEASURE ABBREVIATIONS USED IN THIS REPORT

bbl	barrel	kW	kilowatt
bbl/d	barrel per day	kW•h	kilowatt hour
Btu	British thermal unit	lb	pound avoirdupois
ft	foot	m	meter
ft^3	cubic foot	m^3	cubic meter
ft^3/yr	cubic foot per year	Mft^3	thousand cubic feet
gal	gallon	mt	metric ton
g/m^3	gram per cubic meter	MW	megawatt
g/mt	gram per metric ton	MW•h	megawatt hour
hp	horsepower	pct	percent
in	inch	st	short ton
kg/m^3	kilogram per cubic meter	st/d	short ton per day
km	kilometer	tr oz	troy ounce
kV	kilovolt	yr	year

SELECTED SIGNIFICANT MINERAL DEPOSITS IN ALASKA

A Minerals Availability System Overview

By Donald W. Baggs,[1] Michael J. Northam,[2] Mark P. Meyer,[3] and Kenneth M. Maas[4]

ABSTRACT

This Bureau of Mines publication presents a summary of mining activity in Alaska, as well as institutional and infrastructural factors affecting mineral development in Alaska. Salient information on 67 significant mineral deposits in the State of Alaska is presented in abstract form. The deposits covered are those whose principal commodity is 1 of 20 commodities that appear to have commercial production potential within the State. Many of the deposits described are properties evaluated under the Bureau's Minerals Availability Program (MAP); additional deposits are included for more complete coverage. The appendix provides reference information on 214 additional significant mineral deposits.

[1] Supervisory physical scientist.
[2] Mineral specialist.
[3] Geologist.
[4] Physical science technician.
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INTRODUCTION

About a decade ago, the Bureau of Mines embarked upon an ambitious program to systematically assess mineral supplies available to the U.S. economy. The Minerals Availability Program (MAP), formally established in 1975 (*46*),[5] provides current appraisals of nonfuel mineral supplies for consideration in the development of U.S. minerals policies. Results of these appraisals are published, on a commodity basis, in a series of availability reports that describe the supply of a commodity from domestic or foreign sources in terms of tonnage-price relationships.

The keystones of MAP appraisals are deposit-specific evaluations conducted by geologists and engineers in the Bureau's field operations centers and by private consultants under contract to the Bureau. The deposit evaluations examine in detail the geologic, engineering, and economic factors that determine the viability of individual deposits. Deposit data are obtained from many sources, including published and unpublished Bureau reports, records, and files; U.S. Geological Survey (USGS) Bulletins, Professional Papers, and other reports; technical and professional journals; State and other Federal agency publications; proprietary company reports; data generated during field examinations; and information obtained from knowledgeable individuals.

The Bureau's purpose in publishing this report is to present, in a single volume, nonproprietary data on significant mineral deposits in the State of Alaska. The format provides locational, geological, and operational data for selected deposits, along with presentation of institutional and infrastructural factors affecting mineral development in the State.

Much of the deposit-specific data were derived from MAP deposit evaluations that have been conducted over the past 10 yr. Additional deposit data, as well as information on transportation, water, electricity, natural gas, and taxes, were gathered from recent newspapers and journals and from interviews with company and State officials. Data on mineral production and mining history were obtained from publications of the Bureau and of the Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys (ADGGS). It is anticipated that the information contained in this publication will be of benefit to geologists, mining engineers, prospectors, mining companies, suppliers of mining and milling equipment, and others directly involved in the State's mineral industry. It is also anticipated that the data will be equally as valuable to municipal, borough, and State planners, transportation and utilities commissions, local tax advisory boards, and other public and private organizations that develop policies affecting mining and mineral development in Alaska.

ORGANIZATION OF REPORT

This publication is organized in the following manner: this section is followed by a section that discusses commodity and deposit selection criteria, a section containing a brief summary of the mining history of Alaska, and a section describing infrastructural and institutional factors affecting mining in the State. The site-specific deposit abstract section provides detailed information on 67 mineral occurrences. An extensive reference section is followed by an appendix, which contains information on additional major mineral deposits in Alaska.

The summary of mining activity section and the infrastructural section present background information on the minerals industry of Alaska and a description of some existing infrastructure-institutional factors that affect commercial development of Alaska's mineral deposits. Units of measure in these sections are U.S. customary units, commonly used in engineering.

The infrastructure section contains brief discussions and maps of the transportation (highway, marine, and railroad) and utility (electricity and natural gas) networks in the State. It also contains general information on permitting and taxation procedures and policies affecting mineral development in Alaska.

The largest sections of this publication ("Abstracts of Selected Deposits in Alaska" and the appendix) describe 281 selected significant mineral deposits in Alaska. These deposits are shown in figure 1, which is keyed to tables 1 and 2.

[5] Italicized numbers in parentheses refer to items in the list of references preceding the appendix at the end of this report.

Table 1.—Selected significant mineral deposits in Alaska, by map number

Map No.[1]	Name	Principal commodity[2]
1	Lik[3]	Zn
	Su	Zn
2	Red Dog[3]	Zn
3	Misheguk Mountain	Cu
4	Drenchwater Creek	Pb
5	Siniktanneyak	Cr
6	Kivliktort Mountain	Pb
7	Omar River	Cu
8	Frost	Cu
9	Smucker	Zn
10	Naniratkohort Creek	Cu
11	Bornite[3]	Cu
12	Riley Lode	Cu
13	Ruby	Cu
	Shungnak River	Cu
14	Ambler Shungnak Ridge	Cu
15	KAV	Cu
16	Arctic Camp[3]	Cu
	Dead Creek	Cu
17	Shishakshinovik Pass	Cu
18	Kogoluktuk East	Cu
19	Picnic Creek	Cu
	Sun Group	Zn
20	Arrigetch Peaks	Cu
21	Roosevelt Creek	Cu
22	Ann Group	Pb
23	ABO	Pb
24	Galena Creek	Pb
25	Upper Camp Group	Cu
26	Mikado[3]	Au
27	Caribou Mountain	Cr
28	Bonanza	W
29	Trout Creek	Au
30	Cape Mountain Lode[3]	Sn
	Cape Mountain Placer[3]	Sn
31	Potato Mountain[3]	Sn
32	Lost River[3]	Sn
33	Kougarok Project	Sn
34	Serpentine Hot Springs	Sn
35	Hannum	Pb
36	Peace River	Cu
37	Tozimoran Creek[3]	Au
38	Bonanza Creek[3]	Au
	Morelock Creek[3]	Au
39	Tofty Tin Belt[3]	Sn
40	Sawtooth Mountain	Sb
41	Livengood Creek[3]	Au
42	McCarty[3]	Au
	Cleary Summit	Au
	Cleary Hill	Au
	North Cleary Summit	Au
43	Mount Schwatka	Pb
44	Cache Mountain	U
45	Hi-Yu	Au
46	Mount Prindle	U
47	Eagle Summit	Sb
48	Coal Creek[3]	Au
49	Nome Beaches[3]	Au
50	Windy Creek	Mo
51	Wheeler	Pb
52	Big Hurrah[3]	Au
53	Illinois Creek/Round Top	Cu
54	Yuki River Chromite	Cr
55	Liberty Bell	Au
56	Bartholomae[3]	Au
	Grant[3]	Au
	Clipper	Sb
57	Colbert[3]	W
58	Blue Lead	Au
59	Slate Creek[3]	asb
60	Poovookpuk Mountain	Mo
61	Mount Hurst	Cr
62	Nixon Fork Mine	Au
63	Greenback	Cu
64	Slate Creek Antimony	Sb
65	Quigley Ridge	Ag
66	Carlson Creek	Cu
67	Twin Hills	Au
68	Stampede Lode	Sb
69	Mount Eielson	Zn
70	Partin Creek	Cu
71	Ohio Creek	Au
72	Golden Zone[3]	Au
73	Virginia Creek	Cu
74	Valdez Creek[3]	Au
75	Gold Hill	Au
76	Denali[3]	Cu
77	Kathleen Margaret	Cu
78	Rainy Creek Lode	Cu
79	Emerick Lode	Ni
80	Tok River	Pb
81	Peternie	Mo
82	Mount Fairplay	Cu
83	Bluff	Cu
84	Big Creek	Pb
85	Ladue	Pb
86	BC	Au
87	Wolf Creek Mountain	Hg
88	Decourcy	Hg
89	Golden Horn	Au
90	Chip Loy	Ni
91	Ozzna Creek Tributary	Pb
92	Sheep Creek	Pb
	Rat Fork	Pb
93	Bowser Creek	Ag
94	Shellabarger Pass	Cu
95	Coal Creek Tin	Sn
96	Indian	Ag
97	Iron Creek	Cu
98	Long Lake	Pb
99	Silver Creek	Ag
100	Nabesna Mine	Au
101	Orange Hill[3]	Cu
102	Nabesna Glacier	Cu
103	Bond Creek[3]	Cu
104	Cross Creek	Cu
105	Carl Creek[3]	Cu
106	Baultoff Creek[3]	Cu
	Horsfeld[3]	Cu
107	Fortyseven Creek	Au
108	Mountain Top	Hg
109	Red Devil	Hg
110	Jimmy Lake	Cu
111	Chill Group	Cu
112	Trimble 1-35	Zn
113	Lucky Shot	Au
	Independence	Au
	Gold Cord	Au
	Ready Bullion	Au
114	Wolverine Chromite	Cr
115	Sheep Mountain	Cu
116	Cliff	Au
117	Midas	Cu
118	Tiekel Lode Prospect	Au
119	Bernard Mountain	Cr
120	Spirit Mountain[3]	Ni
121	Silver Star	Ag
122	London and Cape	Cu
123	Green Butte	Cu
	Bonanza (Kennecott)	Cu
124	Peavine	Cu
	Nelson	Cu
125	Colorado	Cu
126	Schaefer	Hg
	Cinnabar	Hg
127	Pass	Cu
128	Kijik River	Zn
129	Kasna Creek[3]	Cu
130	Tazimina	Cu
131	Johnson River	Au
	Difficult Creek	Au
132	Alaska Oracle	Au
133	Lucky Strike	Au
134	Crown Point	Au
135	Granite	Au
136	Beatson[3]	Cu
	Latouche Island Copper Mining Co.	Cu
137	Copper Bullion[3]	Cu
138	Ellamar	Cu
139	Landlocked Bay	Cu
140	Schlosser	Cu
141	Kemuk Mountain	Fe
142	Frying Pan	Fe
143	Battle	Cu
144	Millet	Cu
145	Chenik	Fe
146	Duryea	Au
147	Ursus	Fe
148	Dutton	Cu
149	Iliamna	Fe
150	Iniskin Bay	Cu
151	Claim Point[3]	Cr
152	Red Mountain[3]	Cr
153	Beauty Bay	Au
	Nuka Bay	Au
154	Margerie[3]	Cu
155	Massive Chalcopyrite[3]	Cu
156	Glacier Creek Lode	Ba
	Stampede	Au
157	Klukwan[3]	Fe
158	Salmon River[3]	PGM
159	Lituya Beach Sands[3]	Ti
160	Leroy	Au
	Orange Point	Zn
161	Brady Glacier[3]	Ni
162	Wachusett Inlet[3]	Mo
163	Nunatak[3]	Mo
164	Dundas Bay[3]	Fe
	Dundas Bay Copper	Cu
165	Alaska Chief[3]	Cu
166	William Henry Bay	RE
167	Jualin[3]	Au
	Eureka-Kensington	Au
168	Eagle River	Au
169	Funter Bay[3]	Ni
	Hawk Inlet	Au
170	Greens Creek[3]	Zn
171	Alaska Juneau	Au
	Perseverance	Au
	Treadwell	Au

See explanatory notes at end of table.

Table 1.—Selected significant mineral deposits in Alaska, by map number—Continued

Map No.[1]	Name	Principal commodity[2]
172	Mount Ogden	Mo
173	Puale Bay	Cu
174	Amok	Au
175	Old Harbor	Cu
176	Baumann and Strickler	Au
177	Chalet Mountain	W
178	Yakobi Island[3]	Cu
179	Apex El Nido	Au
180	Mirror Harbor[3]	Ni
181	Cobol Mine	Au
182	Chichagoff	Au
183	Pyrola	Zn
184	Warm Springs Bay	Cu
185	Patty	Zn
186	Port Snettisham[3]	Fe
187	Tracy Group[3]	Zn
	Sweetheart Ridge	Au
188	Point Astley	Zn
189	Sumdum[3]	Cu
190	Sumdum Chief	Au
191	Mildred	Au
192	Cathedral Creek	Cu
193	Mallard Duck Bay	Cu
194	Warner Bay	Cu
195	Silver Bay	Au
196	Snipe Bay[3]	Ni
197	Red Bluff Bay[3]	Cr
198	Cornwallis Peninsula	Pb
199	Kupreanof Mountain	Cu
200	Taylor Creek	Zn
201	Castle Island Mine	Ba
202	Helen S	Zn
203	Salmon Bay	RE
204	St. John Harbor	Zn
205	Zarembo Island	Mo
206	Groundhog Basin[3]	Zn
207	Pat	U
208	North Bradfield River	Fe
209	Cantu	Pb
210	Riverside[3]	W
	Fish Creek[3]	Ag
	Mountain View[3]	W
211	Apollo[3]	Au
	Sitka	Au
	Shumagin	Au
212	Balboa Bay[3]	Cu
213	Herman	Au
214	Coronation Island	Pb
215	Tanya-Marie	Cu
216	Pin Peak	Au
217	Dawson	Au
218	Flagstaff	Au
219	Salt Chuck[3]	PGM
	It	Cu
220	Jumbo Basin[3]	Fe
	Copper Mountain	Cu
221	Mount Andrews Magnetite	Fe
	Rich Hill	Cu
222	Khayyam	Cu
223	Union Bay[3]	Cr
	Moonshine	Cu
224	Hope	Ag
	Friendship	Cu
225	Helm Bay King	Au
	Gold Standard Group	Au
226	Niblack	Cu
227	Valparaiso	Au
228	Seal Cove	Cu
229	Burroughs Bay	Mo
230	Mahoney	Zn
231	Driest Point	Ba
232	Moth Bay[3]	Zn
233	Alamo	Cu
234	IXL	Cu
235	Quartz Hill[3]	Mo
236	McLeod Bay	Au
237	Ross-Adams	U
238	Nichols Bay	Cu
239	Hall Cove	Cr
	Judd Harbor	Cr
240	Sedanka Island	Pb

[1] Map numbers refer to locations on figure 1.
[2] Chemical symbols are used, except for the following: asb, asbestos; PGM, platinum-group metals; RE, rare-earth elements.
[3] Description for this deposit is in the deposit abstract section; other deposits are referenced in the appendix.

Table 2.—Selected significant mineral deposits in Alaska, by deposit name

Name	Principal commodity[1]	Map No.[2]
ABO	Pb	23
Alamo	Cu	233
Alaska Chief[3]	Cu	165
Alaska Juneau	Au	171
Alaska Oracle	Au	132
Ambler Shungnak Ridge	Cu	14
Amok	Au	174
Ann Group	Pb	22
Apex El Nido	Au	179
Apollo[3]	Au	211
Arctic Camp[3]	Cu	16
Arrigetch Peaks	Cu	20
BC	Au	86
Balboa Bay[3]	Cu	212
Bartholomae[3]	Au	56
Battle	Cu	143
Baultoff Creek[3]	Cu	106
Baumann and Strickler	Au	176
Beatson[3]	Cu	136
Beauty Bay	Au	153
Bernard Mountain	Cr	119
Big Creek	Pb	84
Big Hurrah[3]	Au	52
Blue Lead	Au	58
Bluff	Cu	83
Bonanza	W	28
Bonanza (Kennecott)	Cu	123
Bonanza Creek[3]	Au	38
Bond Creek[3]	Cu	103
Bornite[3]	Cu	11
Bowser Creek	Ag	93
Brady Glacier[3]	Ni	161
Burroughs Bay	Mo	229
Cache Mountain	U	44
Cantu	Pb	209
Cape Mountain Lode[3]	Sn	30
Cape Mountain Placer[3]	Sn	30
Caribou Mountain	Cr	27
Carl Creek[3]	Cu	105
Carlson Creek	Cu	66
Castle Island Mine	Ba	201
Cathedral Creek	Cu	192
Chalet Mountain	W	177
Chenik	Fe	145
Chichagoff	Au	182
Chill Group	Cu	111
Chip Loy	Ni	90
Cinnabar	Hg	126
Claim Point[3]	Cr	151
Cleary Hill	Au	42
Cleary Summit	Au	42
Cliff	Au	116
Clipper	Sb	56
Coal Creek[3]	Au	48
Coal Creek Tin	Sn	95
Cobol Mine	Au	181
Colbert[3]	W	57
Colorado	Cu	125
Copper Bullion[3]	Cu	137
Copper Mountain	Cu	220
Cornwallis Peninsula	Pb	198
Coronation Island	Pb	214
Cross Creek	Cu	104
Crown Point	Au	134
Dawson	Au	217
Dead Creek	Cu	16
Decourcy	Hg	88
Denali[3]	Cu	76
Difficult Creek	Au	131
Drenchwater Creek	Pb	4
Driest Point	Ba	231
Dundas Bay[3]	Fe	164
Dundas Bay Copper	Cu	164
Duryea	Au	146
Dutton	Cu	148
Eagle River	Au	168
Eagle Summit	Sb	47
Ellamar	Cu	138
Emerick Lode	Ni	79
Eureka-Kensington	Au	167
Fish Creek[3]	Ag	210
Flagstaff	Au	218
Fortyseven Creek	Au	107
Friendship	Cu	224
Frost	Cu	8
Frying Pan	Fe	142
Funter Bay[3]	Ni	169
Galena Creek	Pb	24
Glacier Creek Lode	Ba	156
Gold Cord	Au	113
Gold Hill	Au	75
Gold Standard Group	Au	225
Golden Horn	Au	89

See explanatory notes at end of table.

Table 2.—Selected significant mineral deposits in Alaska, by deposit name—Continued

Name	Principal commodity[1]	Map No.[2]
Golden Zone[3]	Au	72
Granite	Au	135
Grant[3]	Au	56
Green Butte	Cu	123
Greenback	Cu	63
Greens Creek[3]	Zn	170
Groundhog Basin[3]	Zn	206
Hall Cove	Cr	239
Hannum	Pb	35
Hawk Inlet	Au	169
Helen S	Zn	202
Helm Bay King	Au	225
Herman	Au	213
Hi-Yu	Au	45
Hope	Ag	224
Horsfeld[3]	Cu	106
IXL	Cu	234
Iliamna	Fe	149
Illinois Creek/Round Top	Cu	53
Independence	Au	113
Indian	Ag	96
Iniskin Bay	Cu	150
Iron Creek	Cu	97
It	Cu	219
Jimmy Lake	Cu	110
Johnson River	Au	131
Jualin[3]	Au	167
Judd Harbor	Cr	239
Jumbo Basin[3]	Fe	220
KAV	Cu	15
Kasna Creek[3]	Cu	129
Kathleen Margaret	Cu	77
Kemuk Mountain	Fe	141
Khayyam	Cu	222
Kijik River	Zn	128
Kivliktort Mountain	Pb	6
Klukwan[3]	Fe	157
Kogoluktuk East	Cu	18
Kougarok Project	Sn	33
Kupreanof Mountain	Cu	199
Ladue	Pb	85
Landlocked Bay	Cu	139
Latouche Island Copper Mining Co.	Cu	136
Leroy	Au	160
Liberty Bell	Au	55
Lik[3]	Zn	1
Lituya Beach Sands[3]	Ti	159
Livengood Creek[3]	Au	41
London and Cape	Cu	122
Long Lake	Pb	98
Lost River[3]	Sn	32
Lucky Shot	Au	113
Lucky Strike	Au	133
Mahoney	Zn	230
Mallard Duck Bay	Cu	193
Margerie[3]	Cu	154
Massive Chalcopyrite[3]	Cu	155
McCarty[3]	Au	42
McLeod Bay	Au	236
Midas	Cu	117
Mikado[3]	Au	26
Mildred	Au	191
Millet	Cu	144
Mirror Harbor[3]	Ni	180
Misheguk Mountain	Cu	3
Moonshine	Cu	224
Morelock Creek[3]	Au	38
Moth Bay[3]	Zn	232
Mount Andrews Magnetite	Fe	221
Mount Eielson	Zn	69
Mount Fairplay	Cu	82
Mount Hurst	Cr	61
Mount Ogden	Mo	172
Mount Prindle	U	46
Mount Schwatka	Pb	43
Mountain Top	Hg	108
Mountain View[3]	W	210
Nabesna Glacier	Cu	102
Nabesna Mine	Au	100
Naniratkohort Creek	Cu	10
Nelson	Cu	124
Niblack	Cu	226
Nichols Bay	Cu	238
Nixon Fork Mine	Au	62
Nome Beaches[3]	Au	49
North Bradfield River	Fe	208
North Cleary Summit	Au	42
Nuka Bay	Au	153
Nunatak[3]	Mo	163
Ohio Creek	Au	71
Old Harbor	Cu	175
Omar River	Cu	7
Orange Hill[3]	Cu	101
Orange Point	Zn	160
Ozzna Creek Tributary	Pb	91
Partin Creek	Cu	70
Pass	Cu	127
Pat	U	207
Patty	Zn	185
Peace River	Cu	36
Peavine	Cu	124
Perseverance	Au	171
Peternie	Mo	81
Picnic Creek	Cu	19
Pin Peak	Au	216
Point Astley	Zn	188
Poovookpuk Mountain	Mo	60
Port Snettisham[3]	Fe	186
Potato Mountain[3]	Sn	31
Puale Bay	Cu	173
Pyrola	Zn	183
Quartz Hill[3]	Mo	235
Quigley Ridge	Ag	65
Rainy Creek Lode	Cu	78
Rat Fork	Pb	92
Ready Bullion	Au	113
Red Bluff Bay[3]	Cr	197
Red Devil	Hg	109
Red Dog[3]	Zn	2
Red Mountain[3]	Cr	152
Rich Hill	Cu	221
Riley Lode	Cu	12
Riverside[3]	W	210
Roosevelt Creek	Cu	21
Ross-Adams	U	237
Ruby	Cu	13
Salmon Bay	RE	203
Salmon River[3]	PGM	158
Salt Chuck[3]	PGM	219
Sawtooth Mountain	Sb	40
Schaefer	Hg	126
Schlosser	Cu	140
Seal Cove	Cu	228
Sedanka Island	Pb	240
Serpentine Hot Springs	Sn	34
Sheep Creek	Pb	92
Sheep Mountain	Cu	115
Shellabarger Pass	Cu	94
Shishakshinovik Pass	Cu	17
Shumagin	Au	211
Shungnak River	Cu	13
Silver Bay	Au	195
Silver Creek	Ag	99
Silver Star	Ag	121
Siniktanneyak	Cr	5
Sitka	Au	211
Slate Creek[3]	asb	59
Slate Creek Antimony	Sb	64
Smucker	Zn	9
Snipe Bay[3]	Ni	196
Spirit Mountain[3]	Ni	120
St. John Harbor	Zn	204
Stampede	Au	156
Stampede Lode	Sb	68
Su	Zn	1
Sumdum[3]	Cu	189
Sumdum Chief	Au	190
Sun Group	Zn	19
Sweetheart Ridge	Au	187
Tanya-Marie	Cu	215
Taylor Creek	Zn	200
Tazimina	Cu	130
Tiekel Lode Prospect	Au	118
Tofty Tin Belt[3]	Sn	39
Tok River	Pb	80
Tozimoran Creek[3]	Au	37
Tracy Group[3]	Zn	187
Treadwell	Au	171
Trimble 1-35	Zn	112
Trout Creek	Au	29
Twin Hills	Au	67
Union Bay[3]	Cr	223
Upper Camp Group	Cu	25
Ursus	Fe	147
Valdez Creek[3]	Au	74
Valparaiso	Au	227
Virginia Creek	Cu	73
Wachusett Inlet[3]	Mo	162
Warm Springs Bay	Cu	184
Warner Bay	Cu	194
Wheeler	Pb	51
William Henry Bay	RE	166
Windy Creek	Mo	50
Wolf Creek Mountain	Hg	87
Wolverine Chromite	Cr	114
Yakobi Island[3]	Cu	178
Yuki River Chromite	Cr	54
Zarembo Island	Mo	205

[1] Chemical symbols are used, except for the following: asb, asbestos; PGM, platinum-group metals; RE, rare-earth elements.
[2] Map numbers refer to locations on figure 1.
[3] Description for this deposit is in the deposit abstract section; other deposits are referenced in the appendix.

Deposit Abstracts.—The deposit abstract section is a series of single-page summaries of information pertaining to 67 of the 281 deposits. The abstracts are arranged alphabetically by deposit name. Each abstract is composed of the following six main subject areas:

1. Deposit name and commodity.
2. Location and ownership.
3. Geology.
4. Development.
5. Published reserves and/or resources.
6. References.

Within each subject area there are several individual data elements. Not all data elements, however, are reported for each deposit; proprietary data have been omitted, and some information has yet to be determined or is not presently available. Mining districts given in the abstracts are identified by Bureau mining district names, as shown on figure 2 and in table 3 (*672*).

SI (metric) units are used throughout the deposit abstracts. Published reserves and/or resources have been recalculated into SI units for comparison purposes regardless of the units used in the cited publication. (It is incumbent upon the reader to evaluate the reserve-resource data in light of his or her own knowledge, experience, and assessment of the source's credibility.)

The reference section of each abstract includes bibliographic references for the deposit, the largest scale map on which the deposit is located (see figure 3 for Alaska quadrangle locations), and the Bureau's file reference or sequence number. The sequence number is a 10-digit number that is unique to the deposit and allows rapid retrieval of relevant data from the MAP database. The first three digits are the State code (002 for Alaska), the fourth through sixth digits are the Bureau's quadrangle number (table 4), and the last four digits are a unique number for each mineral deposit. Three other file references are included: the Mine Safety and Health Administration (MSHA) number (Mid number), which is assigned by MSHA to active properties; the USGS's Mineral Resources Data System (MRDS) number (MRDS is the former USGS Computerized Resources Information Bank (CRIB)); and Alaska Kardex numbers, a system maintained by the ADGGS to monitor the status of mining claim activity in the State.

Appendix Listing.—The appendix consists of a listing of each of 214 significant mineral deposits that do not have a publishable reserve and grade figure. In order to save space, the format consists simply of deposit name, map number, commodities, and an extensive list of bibliographic references. Deposits in the appendix may be as important or perhaps of greater significance than deposits with full abstracts, but insufficient information exists to warrant their inclusion in the main body of the report.

Table 3.—Alaska mining districts, by region

Map No.[1]	District
	COOK INLET-SUSITNA
1	Anchorage.
2	Redoubt.
3	Valdez Creek.
4	Willow Creek.
5	Yentna.
	COPPER RIVER
6	Chistochina.
7	Nelchina.
8	Nizina.
9	Prince William Sound.
10	Yakataga.
	KENAI PENINSULA
11	Homer.
12	Hope.
13	Seward.
	KUSKOKWIM RIVER
14	Aniak.
15	Bethel.
16	Goodnews Bay.
17	McGrath.
	NORTHERN ALASKA
18	Barrow.
19	Canning.
20	Colville.
21	Lisburne.
22	Wainwright.
	NORTHWESTERN ALASKA
23	Kiana.
24	Noatak.
25	Selawik.
26	Shungnak.
	SEWARD PENINSULA
27	Council.
28	Fairhaven.
29	Kougarok.
30	Koyuk.
31	Nome.
32	Port Clarence.
33	Serpentine.
	SOUTHEASTERN ALASKA
34	Admiralty.
35	Chichagof
36	Hyder.
37	Juneau.
38	Ketchikan.
39	Kupreanof.
40	Petersburg.
41	Yakutat.
	YUKON RIVER
42	Anvik.
43	Black.
44	Bonnifield.
45	Chandalar.
46	Chisana.
47	Circle.
48	Delta River.
49	Eagle.
50	Fairbanks.
51	Fortymile.
52	Goodpastor.
53	Hot Springs.
54	Hughes.
55	Iditarod.
56	Innoko.
57	Kaiyuh.
58	Kantishna.
59	Koyukuk.
60	Marshall.
61	Melozitna.
62	Rampart.
63	Ruby.
64	Sheenjek.
65	Tok.
66	Tolovana.
67	Yukon Flats.

[1] Map numbers refer to locations on figure 2.

Source: Reference *672*.

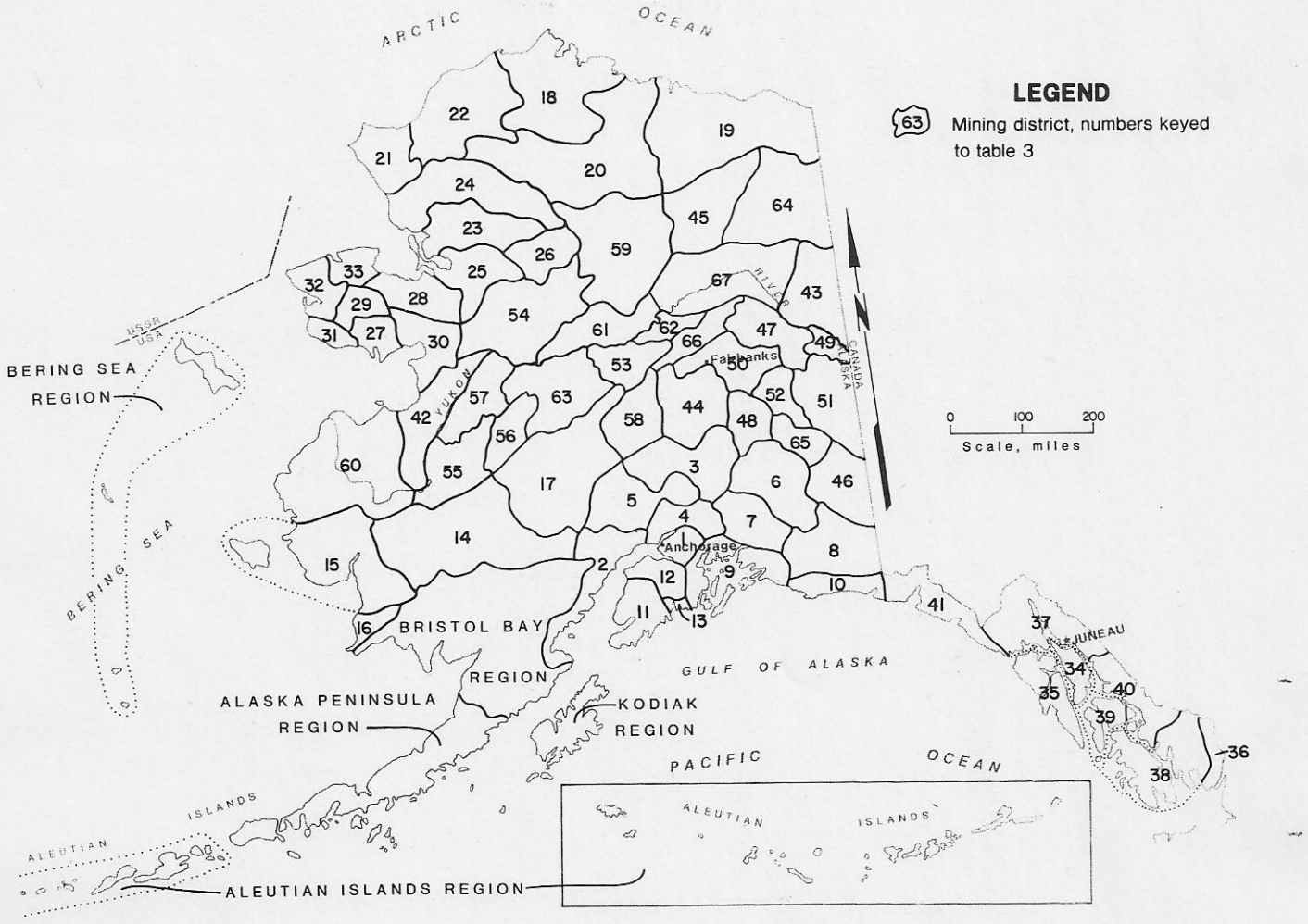

Figure 2.—Alaska mining districts. (Source: reference *672*.)

Table 4.—Alaska 1:250,000-scale quadrangles

Map No.[1]	Quadrangle name
1	Barrow.
2	Wainwright
3	Meade River.
4	Teshekpuk.
5	Harrison Bay.
6	Beechey Point.
7	Flaxman Island.
8	Barter Island.
9	Point Lay.
10	Utukok River.
11	Lookout Ridge.
12	Ikpikpuk River.
13	Umiat.
14	Sagavanirktok.
15	Mount Michelson.
16	Demarcation Point.
17	Point Hope.
18	De Long Mountains.
19	Misheguk Mountain.
20	Howard Pass.
21	Killik River.
22	Chandler Lake.
23	Philip Smith Mountains.
24	Arctic.
25	Table Mountain.
26	Noatak.
27	Baird Mountains.
28	Ambler River.
29	Survey Pass.
30	Wiseman.
31	Chandalar.
32	Christian.
33	Coleen.
34	Shishmaref.
35	Kotzebue.
36	Selawik.
37	Shungnak.
38	Hughes.
39	Bettles.
40	Beaver.
41	Fort Yukon.
42	Black River.
43	Teller.
44	Bendeleben.
45	Candle.
46	Kateel River.
47	Melozitna.
48	Tanana.
49	Livengood.
50	Circle.
51	Charley River.
52	Nome.
53	Solomon.
54	Norton Bay.
55	Nulato.
56	Ruby.
57	Kantishna River.
58	Fairbanks.
59	Big Delta.
60	Eagle.
61	St. Lawrence.
62	St. Michael.
63	Unalakleet.
64	Ophir.
65	Medfra.
66	Mount McKinley.
67	Healy.
68	Mount Hayes.
69	Tanacross.
70	Black.
71	Kwiguk.
72	Holy Cross.
73	Iditarod.
74	McGrath.
75	Talkeetna.
76	Talkeetna Mountains.
77	Gulkana.
78	Nabesna.
79	Hooper Bay.
80	Marshall.
81	Russian Mission.
82	Sleetmute.
83	Lime Hills.
84	Tyonek.
85	Anchorage.
86	Valdez.
87	McCarthy.
88	St. Matthew.
89	Nunivak Island.
90	Baird Inlet.
91	Bethel.
92	Taylor Mountains.
93	Lake Clark.
94	Kenai.
95	Seward.
96	Cordova.
97	Bering Glacier.
98	Mount St. Elias.
99	Cape Mendenhall.
100	Kuskokwim Bay.
101	Goodnews.
102	Dillingham.
103	Iliamna.
104	Seldovia.
105	Blying Sound.
106	Middleton Island.
107	Icy Bay.
108	Yakutat.
109	Skagway.
110	Atlin.
111	Mount Fairweather.
112	Juneau.
113	Taku River.
114	Sitka.
115	Sumdum.
116	Port Alexander.
117	Petersburg.
118	Bradfield Canal.
119	Craig.
120	Ketchikan.
121	Dixon Entrance.
122	Prince Rupert.
123	Hagemeister Island.
124	Nushagak Bay
125	Naknek.
126	Mount Katmai.
127	Afognak.
128	Bristol Bay.
129	Ugashik.
130	Karluk.
131	Kodiak.
132	Pribilof Islands.
133	Chignik.
134	Sutwik Island.
135	Trinity Islands.
136	Kaguyak.
137	Stepovak Bay.
138	Port Moller.
139	Cold Bay.
140	Simeonof Island.
141	False Pass.
142	Unimak.
143	Unalaska.
144	Umnak.
145	Samalga Island.
146	Amukta.
147	Seguam.
148	Atka.
149	Adak.
150	Gareloi Island.
151	Rat Islands.
152	Kiska.
153	Attu.

[1] Map numbers refer to locations on figure 3.

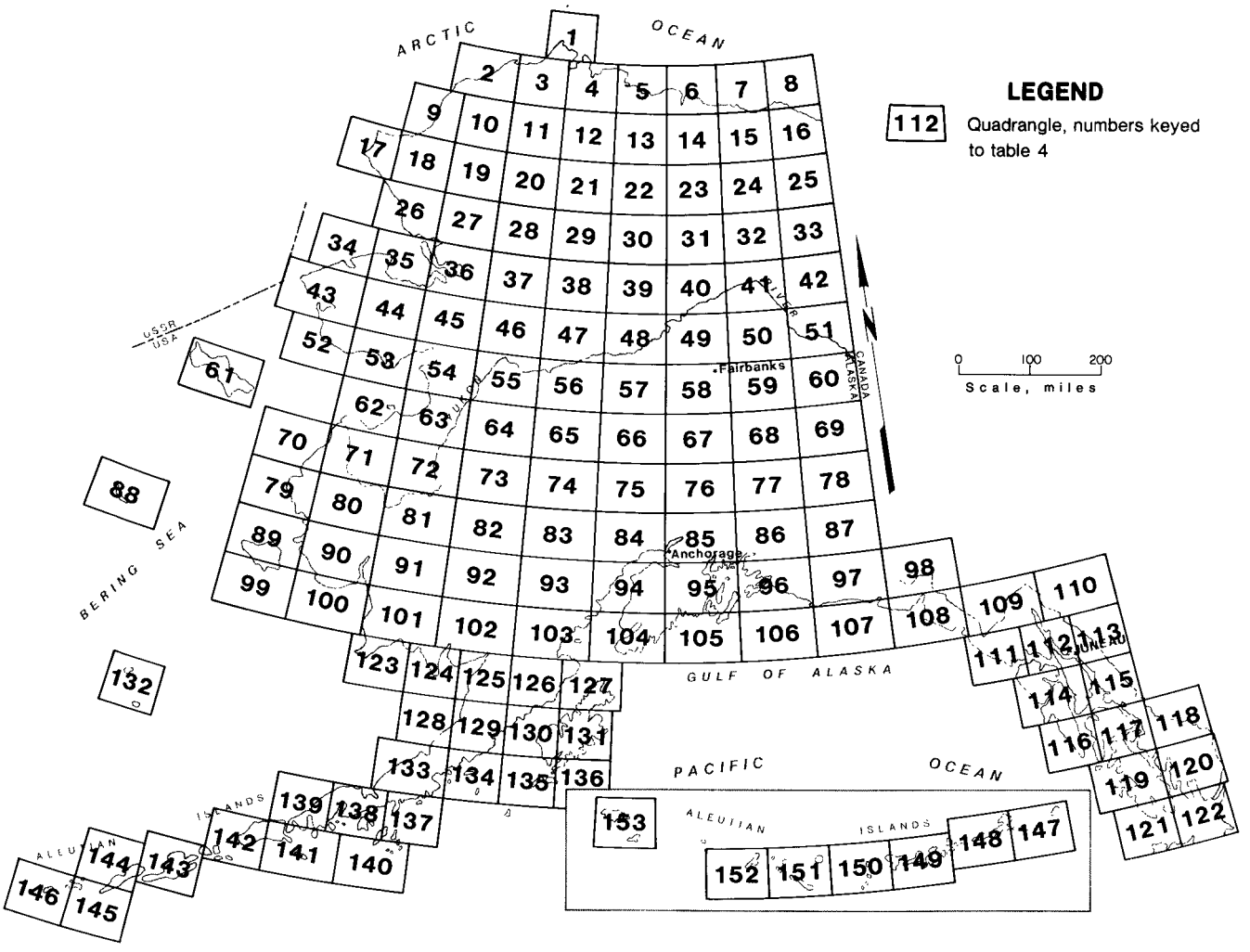

Figure 3.—Alaska 1:250,000-scale quadrangles.

COMMODITY AND DEPOSIT SELECTION

This publication is in a sense a directory of significant mineral deposits in the State of Alaska. Deposit and commodity coverage mainly reflects the Bureau's work conducted under MAP, which is concerned with a continuing assessment of the geologic, engineering, and economic availability of mineral supplies for the U.S. economy. Although the Bureau's ultimate objective is to incorporate all nonfuel mineral commodities into MAP, current MAP studies cover only the commodities shown below:

Aluminum	*Gold	*Platinum
*Antimony	*Graphite	Potash
*Asbestos	*Iron	Rare earths
*Barite	*Lead	*Silver
*Beryllium	Lithium	Sulfur
*Chromium	Magnesium	*Tin
*Cobalt	Manganese	Titanium
Columbium-tantalum	*Mercury	Thorium
*Copper	*Molybdenum	*Tungsten
*Fluorspar	*Nickel	*Zinc
	Phosphate	Zirconium-hafnium

All of these commodities, with the exception of hafnium, reportedly occur in Alaska. Based on current knowledge, however, only those marked by asterisks appear to have potential commercial production opportunities based on deposit size, grade, and market. This publication focuses on deposits whose principal commodity is 1 of the 20 commodities so marked.

Under MAP, the Bureau has evaluated nearly 40 deposits in Alaska. Most were found to have identified reserves or resources; it is these deposits that form the core of the deposit abstract section in this report. Description of other properties that appear to have commercial potential and that have yet to be evaluated under MAP are also included to provide more complete commodity coverage.

Final deposit selection was made after consultation with individuals and agencies familiar with the Alaska mining industry. In addition to hosting one of the commodities listed above (as a principal commodity), a deposit had to meet one or more of the following criteria:

1. It had been evaluated under MAP.
2. Its reserves or resources had been published. (Several deposits were included that have minor reserve estimates, to indicate the type of reserve and grade typically found in a district.)
3. It was a producing or past producing mine with known production potential.
4. It was a nonproducing property with a known production potential based on proprietary and/or public exploration and economic data.
5. There was sufficient nonproprietary geological and development data to permit completion of a deposit abstract.

Deposit abstracts have been prepared for 67 of the significant deposits, including significant placer deposits with publishable reserve data. However, coverage of all the significant placer deposits in Alaska at this level of detail is beyond the scope of this publication. Instead, a summary of the major placer districts in the State is given in the following section.

SUMMARY OF MINING ACTIVITY IN ALASKA

Mining has taken place in some form or another since the aboriginal inhabitants first used gold, copper, and other metals for ornamental beadwork, jewelry, utensils, and weapons (*720*). Gold mining has dominated the history of mining in Alaska. Largely as a result of placer mining, Alaska ranks in the top four States in total gold production (*296*). Of the more than 30 million tr oz of gold that have been produced from Alaska, about two-thirds has come from placer deposits. Table 5 provides a listing of Alaskan placer production and compares the relative productivity of the various Alaskan placer districts.[6]

[6] The production amounts and years given are those listed in the source (*490*). However, Bureau of Mines mining district names are used. Production figures for years past 1959 were not added to the table because different reporting methods have been used since that time. The Bureau is currently assessing placer production figures for Alaska mining districts, and more up-to-date production totals will be published in the near future.

Table 5.—Alaska placer production

Region and district	Production, tr oz	Discovery date	Years of recorded production
Cook Inlet-Susitna:			
Valdez Creek	34,900	1903	1908-36
Yentna	115,200	1905	1905-59
Total	150,100	NAp	NAp
Copper River:			
Chistochina	141,000	1898	1900-59
Nizina	143,440	1902	1902-59
Yakataga	15,709	1891	1891-1959
Total	300,149	NAp	NAp
Kenai Peninsula:			
Homer, Hope, and Seward	96,500	1848	1895-1959
Kuskokwim River:			
Aniak	245,055	1907	1909-59
Goodnews Bay	29,700	1900	1911-47
McGrath	13,900	1908	1908-59
Total	288,655	NAp	NAp
Northwestern Alaska:			
Kiana and Shungnak	12,500	1898	1898-1959
Seward Peninsula:			
Council	839,000	1865	1898-1959
Fairhaven	379,200	1900	1901-59
Kougarok	150,400	1899	1900-57
Koyuk	52,000	1900	1918-59
Nome	3,606,000	1897	1897-1959
Port Clarence	28,000	1898	1898-1959
Total	5,054,600	NAp	NAp
Southeastern Alaska:			
Juneau	12,500	1898	1898-1959
Yukon River:			
Bonnifield	36,600	1903	1903-59
Chandalar	30,708	1906	1906-59
Chisana	44,760	1913	1913-59
Circle	705,660	1893	1894-1959
Eagle	40,220	1895	1906-59
Fairbanks	7,303,996	1878	1901-59
Fortymile	400,000	1883	1883-1959
Hot Springs	447,850	1898	1904-59
Iditarod	1,297,500	1908	1908-59
Innoko	518,565	1906	1906-59
Kantishna	45,925	1904	1905-57
Koyukuk	278,000	[1]1898	1900-59
Marshall	113,200	1913	1914-57
Rampart	86,800	1882	1904-59
Ruby	389,100	1907	1907-59
Tolovana	375,000	1892	1915-59
Total	12,113,884	NAp	NAp

NAp Not applicable.
[1] Discovery date is questionable.

Sources: References *490*, pp. 8-31, and *672*.

The first reports of European-discovered gold in the territory came from a Russian-American Co. party, who found gold on the Russian River drainage on the Kenai Peninsula in 1834 (*720*).

In the 1850's, the Russians began mining coal on the Kenai Peninsula for local use and to fuel ships. The Russian-American Co. attempted to export coal to a Russian colony in California from their mine at Port Graham but that venture failed, although the mine continued to produce for local and maritime use (*50*).

Americans began mining placer gold in southeast Alaska in the late 1860's. It was reported that 2,000 tr oz had been produced from Windham and Holkam Bays by 1871 (*121*). During this period, hard-rock mining commenced at the Stewart Mine near Sitka, also in southeast Alaska.

Joseph Juneau and Richard Harris found placer gold in 1880 at what is now called Gold Creek near present-day Juneau. Their search was aided by natives who showed Juneau and Harris the gold they had found in the area. Extensive placer mining took place at Gold Creek, and eventually large low-grade gold lode deposits were discovered, several of which were in production by 1882.

On Douglas Island, across the channel from Juneau, the Treadwell Mining complex was developed into a world-class underground gold mine by 1887. There was a disastrous cave-in and subsequent flooding in 1917, which permanently closed three of the four mines that made up the complex. When the last mine, the Ready Bullion, closed in 1922, over 3 million tr oz of gold had been produced from 28.2 million st of ore (*720*). During the early years of the development of the Juneau area, there were also discoveries and production from the Fortymile district (1886), the Kenai Peninsula (1888), Unga Island (1891), and the Circle district (1893).

The Klondike gold rush in the Yukon Territory in 1896 led to increased prospecting activity in Alaska and to similar rushes in Nome (1898), Fairbanks (1902), Iditarod (1909), and Livengood (1914).

The early 1900's also saw production of placer tin from the Seward Peninsula and marble, gypsum, and garnet from various locations in southeast Alaska.

During this time, copper mines went into production in southeast Alaska. By 1905 there were 10 mines producing copper from the area west of Ketchikan. After completion of the 186-mile-long railroad from Cordova to McCarthy in 1911, production began from the world-famous Kennecott copper mines near McCarthy (*121*). The Kennecott mines produced a staggering amount of high-grade ore; at one time

in 1916 the aerial tramway that carried material from the hillside mines to the mill transported 175 st/d of crude ore averaging 70 pct Cu. The Kennecott operation closed in 1938.

During World War I, there was also some small, high-grade production of tungsten, antimony, and chromium from various locations (*121*).

When the Alaska Railroad was completed in the 1920's, larger scale coal production began from both the Matanuska and Healy coalfields. This lower cost source of power encouraged the major mining companies to enlarge their operations. They brought large, electric-powered dredges into the Fairbanks area, and their success soon encouraged companies in several other districts to do the same.

Silver lodes were developed at several locations in the State, including Hyder in southeast Alaska and Kantishna, north of Mount McKinley in the interior. The late 1920's saw a profit finally come to the Alaska Juneau gold mine in southeast Alaska after several operators and many lean years had passed. The Alaska Juneau Mine became famous as one of the lowest grade gold mines ever operated at a profit. It continued producing almost continuously until 1944 when it closed because of increased costs for both labor and operations.

In 1926, platinum was discovered at Goodnews Bay. A bucket line dredge that operated continuously for 40 yr was later installed (*121*). Alaska has been the largest producer of platinum metals in the United States. More than 98 pct of Alaskan platinum production has come from two mines in Alaska: Goodnews Bay produced over 545,000 tr oz, and the Salt Chuck Mine, near Ketchikan, produced over 22,000 tr oz between 1907 and 1940.

Most mineral production was on a downswing as the Great Depression approached at the end of the 1920's. In 1934, the U.S. Government raised the price of gold from $20.67/tr oz to $35.00/tr oz. This caused both placer and lode gold production to increase dramatically through the 1930's.

During World War II, the U.S. Government declared that gold mining was a nonessential industry and therefore closed almost all gold mines in the United States. The Alaska Juneau and several other gold mines were exempted from the closure because they contained byproducts important to the war effort and were judged important to the local economies. Platinum production continued at Goodnews Bay. Antimony, mercury, tungsten, chromium, asbestos, coal, and sand and gravel were all produced in varying amounts, often with Federal subsidies, to support the war effort. Most operations closed at the end of the war.

During the Korean war, the U.S. Government financed construction of a mine at the Lost River tin deposit, one of the largest tin reserves in North America. The reserves had been blocked out by the Government during World War II in preparation for production that did not come about at that time. Government financing ended after the war, and the mine was closed in 1956. Tin placers have been mined in the area since that time.

The Bokan Mountain uranium (thorium) lode deposit was put into production in 1955. This southeast Alaska deposit produced intermittently until 1971.

Gold production recovered after World War II, only to go into a slow, steady decline from 1950 to 1972 when the price of gold was decontrolled by the Government and allowed to be set in the marketplace. Between 1972 and 1980 there was a threefold increase in the quantity of gold produced. As shown in table 6, gold production has continued its upward climb.

Table 6.—Alaska gold production, 1979-84, thousand troy ounces

1979	65	1982	175
1980	75	1983	169
1981	134	1984	175

Sources: References *121, 295-296.*

By 1957, mercury production had reached its highest level. Production peaked at nearly 20 pct of U.S. requirements and continued at this level until 1963. The mercury-producing area was centered in the Aniak district in southwest Alaska.

In 1958, Fremont Mining Co. discovered nickel-copper sulfides in nunataks, or rock islands, near the edge of Brady Glacier in what is now Glacier Bay National Park (*518*). Extensive drilling through glacier ice delineated one of the largest nickel deposits in the United States.

The 1960's were marked by increased use of helicopter-supported exploration efforts in remote terrain. The Ambler schist belt of copper mineralization in northwest Alaska was explored, and many major deposits were discovered, such as the Arctic deposit, which was discovered by Bear Creek Mining Co. in 1965.

The USGS located chrysotile fiber near Slate Creek in the Fortymile district in 1968. Doyon Regional Corp., one of the Native companies formed through the Alaska Native

Claims Settlement Act (ANCSA), chose the area in one of its allotted land selections in the mid-1970's. In 1980, Doyon announced the discovery of a major deposit.

In 1974, geologists working for U.S. Borax and Chemical Corp. followed anomalous stream sediment samples to a surface outcrop of molybdenite that turned out to be part of a world-class porphyry molybdenum deposit. Quartz Hill, located about 45 miles east of Ketchikan, is now known to be one of the world's largest molybdenum deposits.

The first indications of mineralization at the now-developing Red Dog zinc-lead deposit were geochemical anomalies announced by the USGS in 1968. As a result of publicity generated by a Bureau of Mines press release in 1976, several companies staked claims in the area of the deposit, although much of the land was closed to mineral entry. NANA, a Native corporation, selected the same area, and ownership of the deposit was in doubt for several years. NANA and Cominco Alaska are now working together to develop the property. Other major zinc-lead deposits have been located in the vicinity.

The announcement of the discovery of the Greens Creek zinc, lead, copper, silver, and gold deposit came in 1977. Greens Creek is located near Juneau on Admiralty Island.

Many people see the development of several large deposits in Alaska's future (*119*). As these new Alaskan mines move closer to production, it is probable that the infrastructure necessary to develop them will encourage owners to bring other nearby deposits into production. The development into production of Alaskan mines will depend upon world metal prices, the stability of the Alaskan investment climate, and the availability of infrastructure in interior Alaska.

INFRASTRUCTURAL AND INSTITUTIONAL FACTORS AFFECTING MINING ACTIVITIES IN ALASKA

ELECTRIC POWER

The State of Alaska's electrical power generation systems consist of the central systems associated with electricity generation in the railbelt area (the area traversed by the Alaska Railroad, between Seward and Fairbanks) and the decentralized systems associated with electricity generation in rural areas. Alaska's electrical power is generated by utilities, industry, military, and independent operators (in rural and isolated areas). The utilities and independent operators account for 66.6 pct (1,374 MW) of Alaska's installed capacity, industry accounts for 23.5 pct (485 MW), and national defense for 9.9 pct (205 MW) (*9*). Figure 4 shows the locations of electrical generating systems; table 7 shows their installed capacities. Figure 5 shows typical price ranges for energy in 1981 by region.

Figure 6 shows existing electrical transmission systems in Alaska. Table 8 lists costs and specifications of various types of transmission line construction.

Electrical generation in Alaska is powered primarily by natural gas, diesel (fuel oil), hydroelectric power, and coal, as discussed in following sections. Electric costs to the consumer in Alaska range from 5¢ to 6¢/kW•h in Anchorage to 27¢/kW•h ($2.00/gal fuel oil) in the bush communities (*9*).

Electricity supplies should be adequate for new mining and mineral processing facilities located close to major power sources and transmission lines. New mining and mineral processing facilities in remote locations would require their own electrical generation plants.

NATURAL GAS

Alaska's natural gas is produced in two areas: the North Slope region, and the Cook Inlet area. The North Slope region contains 29 trillion ft^3 of proven reserves, while Cook Inlet contains 3 trillion ft^3 of proven reserves (table 9).

Cook Inlet gas is used for in-State heating and electrical generation for residential, commercial, and industrial users in south-central Alaska. North Slope natural gas from the Barrow gas field supplies the community of Barrow.

Table 7.—Location of electrical generating systems and their installed capacity in Alaska

Map No.[1]	Location	Installed capacity, MW	Type[2]
1	Barrow	7.0	CT, D
2	Wainwright	1.1	D
3	Atkasook	.7	D
4	Nuiqsut	.8	D
5	Deadhorse	6.1	D
6	Kaktovik	.7	D
7	Point Lay	.4	D
8	Point Hope	.9	D
9	Anaktuvuk Pass	.9	D
10	Kivalina	.5	D
11	Noatak	.3	D
12	Ambler	.4	D
13	Kiana	.7	D
14	Bettles	.6	D
15	Kotzebue	6.6	D
16	Shungnak	3.6	D
17	Noorvik	.6	D
18	Selawik	.7	D
19	Fort Yukon	1.4	D
20	Shishmaref	.6	D
21	Hughes	.2	D
22	Circle	.3	D
23	Huslia	.3	D
24	Wales	3.1	D
25	Rampart	.2	D
26	Teller	.4	D
27	Tanana	2.0	D
28	Minto	.2	D
29	Manley Hot Springs.	.2	D
30	Koyuk	.3	D
31	Fairbanks and vicinity.	284.7	CT, D, ST
32	Galena	.8	D
33	Nulato	.7	D
34	Elim	.2	D
35	Nome	7.0	D
36	Shaktoolik	.2	D
37	Kaltag	.3	D
38	Lake Minchumina	.1	D
39	Unalakleet	1.9	D
40	Gambell	.5	D
41	Savoonga	.7	D
42	Dot Lake	.3	D
43	Saint Michael	.3	D
	Stebbins	.2	D
44	Tok	3.5	D
45	Kotlik	.5	D
46	Paxson Lodge	.4	D
47	Northway	.9	D
48	McGrath	1.5	D
49	Grayling	.2	D
50	Emmonak	.8	D
51	Alakanuk	.8	D
52	Shageluk	2.4	D
53	Anvik	.2	D
54	Chistochina	.5	D
55	Holy Cross	.2	D
56	Glennallen	7.6	D
57	Mountain Village.	1.1	D
58	Saint Mary's	1.5	D
59	Pilot Station	.4	D
60	Scammon Bay	.3	D
61	Marshall	.2	D
62	Aniak	1.3	D
63	Chevak	.8	D
	Hooper Bay	.8	D
64	Lower Kalskag	.5	D
65	Anchorage and vicinity.	771.2	CT, D, H, ST
66	Valdez	22.0	D, H
67	Nunapitchuk	.6	D
68	Bethel	8.2	D
	Kwethluk	.6	D
69	Napakiak	.3	D
70	Tununak	.2	D
71	Cordova	8.5	D
72	Toksook Bay	.5	D
73	Mekoryuk	.3	D
74	Eek	.2	D
75	Nondalton	.2	D
76	Iliamna	1.0	D
	Newhalen	.2	D
77	Quinhagak	.4	D
78	Yakutat	2.0	D
79	New Stuyahok	.3	D
80	Skagway	3.8	D, H
81	Seldovia	2.1	D
82	Klukwan	.7	D
83	Haines	4.1	D
84	Togiak	.5	D
85	Goodnews Bay	.2	D
86	Dillingham	3.9	D
87	Manokotak	.6	D
88	Naknek	6.3	D
89	Juneau	113.9	D, H
90	Hoonah	1.2	D
91	Pelican	.5	D, H
92	Kodiak	29.9	D, H
93	Tenakee Springs	.3	D
94	Larsen Bay	.2	D
95	Angoon	.9	D
96	Old Harbor	.3	D
97	Sitka	32.6	D, H
98	Kake	1.6	D
99	Petersburg	7.1	D, H
100	Wrangell	7.7	D, H
101	Chignik	.3	D
102	Craig	1.3	D
	Klawock	1.4	D
103	Kasaan	.2	D
104	Ketchikan	28.8	D, H
105	Sand Point	4.1	D
106	Hydaburg	.7	D
107	Cold Bay	2.0	D
108	Metlakatla	6.0	D, H
109	King Cove	.6	D
110	Nikolski	.1	D
111	Atka	.2	D

[1] Map numbers refer to locations on figure 4.
[2] Symbols used: CT, combustion turbine; D, diesel; H, hydroelectric; ST, steam turbine.

Source: Reference 9.

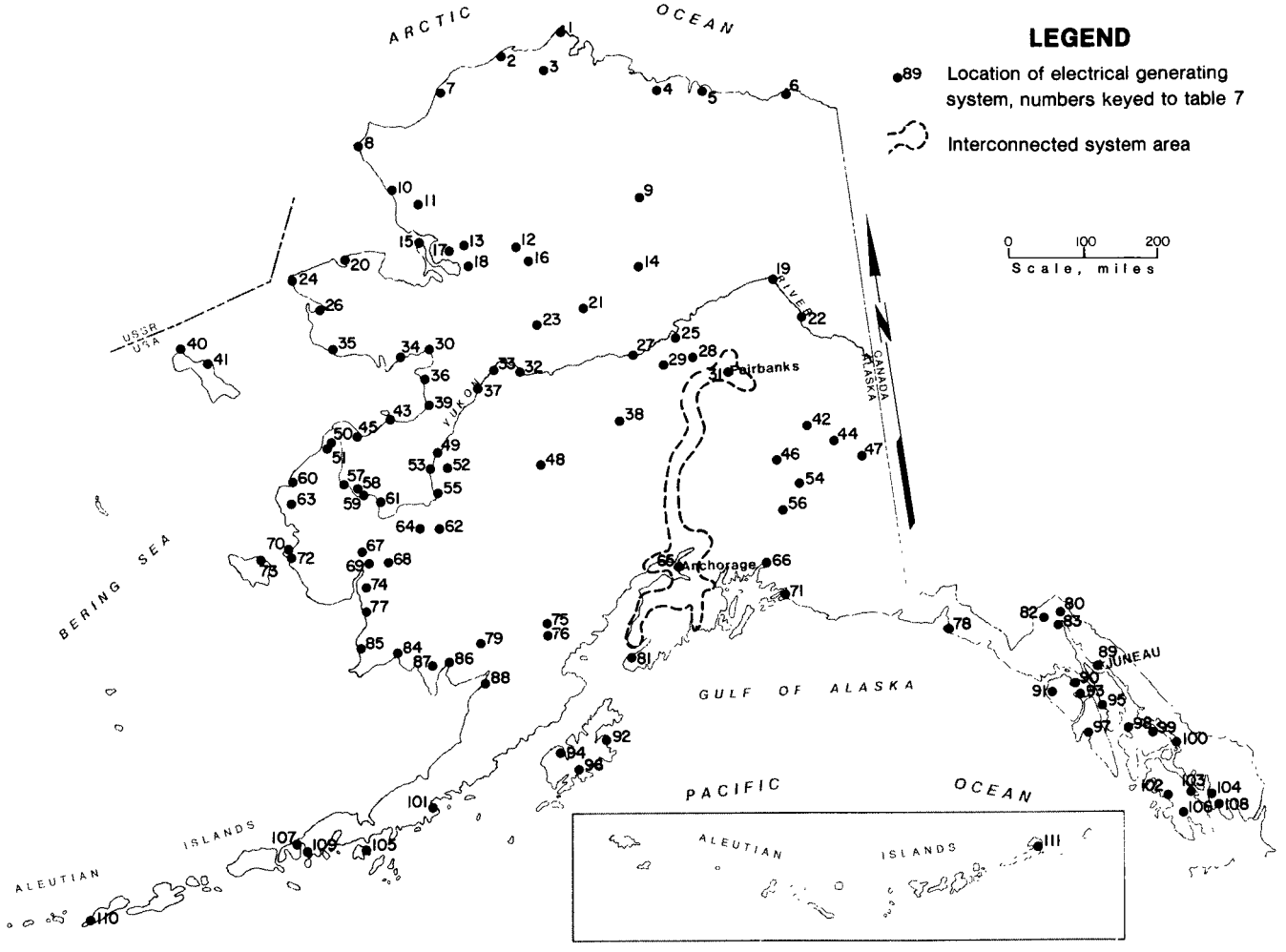

Figure 4.—Location of electrical generating systems in Alaska. (Source: reference *9*.)

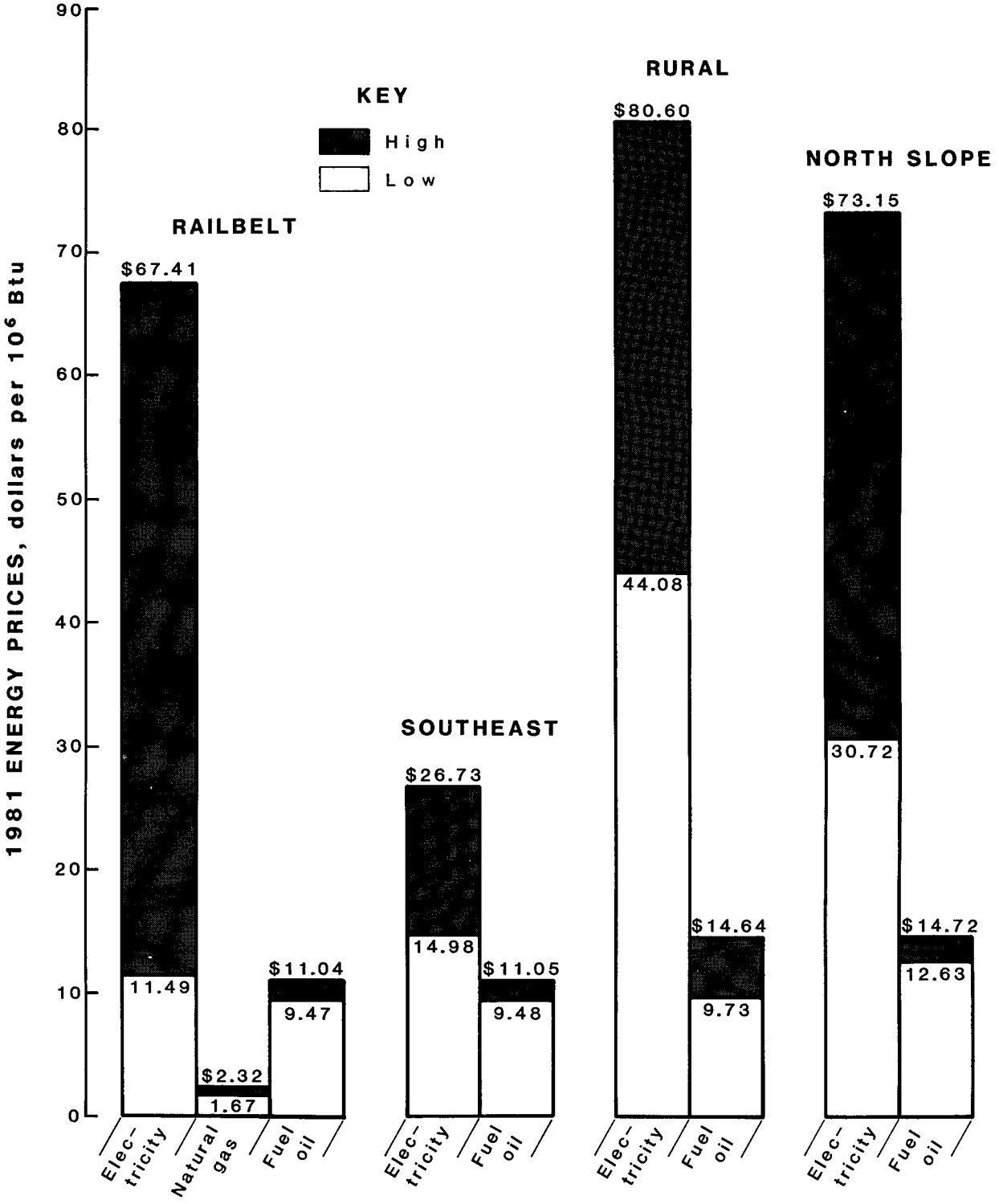

Figure 5.—Typical price ranges for energy in Alaska during 1981. (Source: reference *41*.)

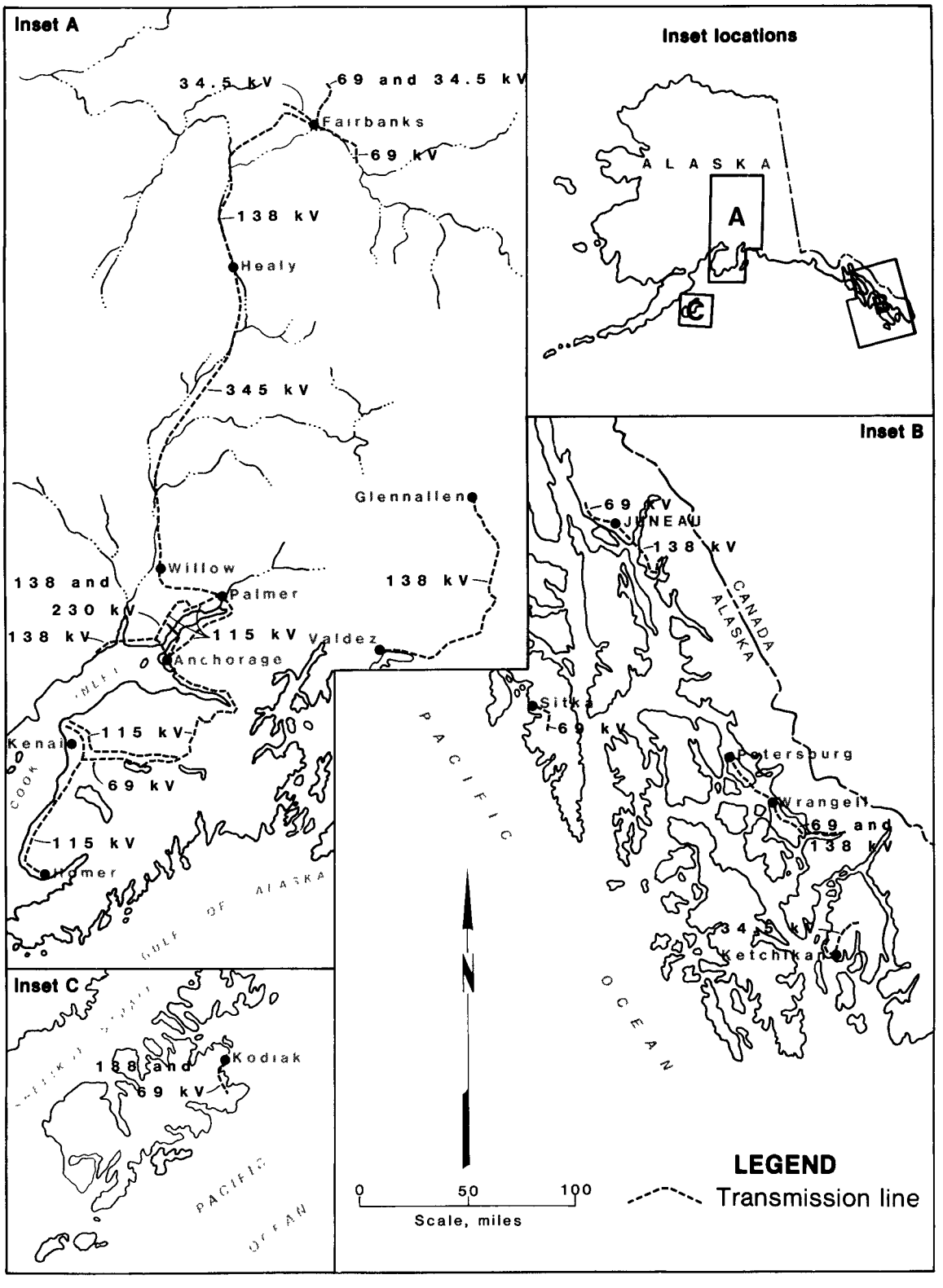

Figure 6.—Electrical transmission systems in Alaska. (Source: reference *9*.)

Table 8.—Costs of transmission line construction in Alaska, by line type

	Single wire	69 kV	115 kV	230 kV	345 kV
Length ..... miles	10	30	80	160	240
Size ..... kW	94	32,000	64,000	112,000	280,000
Annual energy production ..... MW•h	558	224,256	448,512	784,896	1,962,240
1982 construction costs ..... 10^3	$379	$9,750	$30,000	$60,000	$114,000
Capital cost breakdown, pct:					
Materials and equipment	58	50	50	50	50
Labor	42	50	50	50	50
Project life ..... yr	15	30	30	30	30

Source: Alaska Department of Commerce and Economic Development.

Table 9.—Alaska natural gas reserves, trillion cubic feet

Area	Proven	Undiscovered	
		95-pct probability	Mean
North Slope	29.02	16.4	73.5
Bering Sea	ND	ND	13.2
Gulf of Alaska[1]	3.0	1.8	10.5
Other	ND	34.9	4.0
Total	32.02	53.1	101.2

ND Not determined. [1] Includes Cook Inlet.

Source: Reference *275*.

Two natural gas processing facilities are located at Kenai, where a liquefied natural gas (LNG) plant processes 50 billion ft^3/yr, and an ammonia-urea plant processes 50 to 51 billion ft^3/yr (*9*).

Construction costs of natural gas pipelines in Alaska range from $300 to $400 per mile in 1982 dollars. Cost of Cook Inlet gas to its customers, based on pipeline costs, is $1.76 to $3.42/$Mft^3$ + cost of gas + cost of local distribution. At a $2.32 gas price (1982) + $1.80/$Mft^3$, the range of consumer gas prices would be $5.88 to $7.54/$Mft^3$ (*41*).

If a pipeline were to be built from the North Slope to Fairbanks, the cost of natural gas would be $3.00 to $5.00/$Mft^3$ (pipeline cost + cost of gas) + $2.00 to $2.50/$Mft^3$ (distribution costs) = $5.00 to $5.50/$Mft^3$ (consumer price). Current cost (1982 price) for Fairbanks customers is $10.00/$Mft^3$ (*41*).

Table 10 shows cost of natural-gas-powered electrical generation plants.

OIL

Alaska's oils are not extensively used by the larger electric utilities, because they are supplied by natural gas, coal, and hydropower. Diesel fuel is used extensively in the rural communities for electrical generation. The cost of two sizes of diesel electrical generation plants are shown on table 11.

Proven reserves of crude oil in Alaska are estimated at 8.7 billion bbl onshore and 0.2 billion bbl offshore, as shown on table 12 (*9*).

Table 10.—Costs of natural-gas-powered electrical plants in Alaska, by plant size

	24,000 kW[1]	75,000 kW[2]
Annual energy production ..... MW•h	105,120	459,900
1982 construction costs ..... 10^3	$9,600	$78,750
Capital cost breakdown, pct:		
Materials and equipment	70	70
Labor	30	30
Operational and maintenance charges per kilowatt hour	$0.013	$0.0027
Project life ..... yr	20	25

[1] Combustion turbine. [2] Combined cycle combustion turbine.

Source: Reference *41*.

Table 11.—Costs of diesel-powered electrical plants in Alaska, by plant size

	500 kW	10,000 kW
Annual energy production ..... MW•h	1,752	5,256
1982 construction costs ..... 10^3	$137.5	$8,500
Capital cost breakdown, pct:		
Materials and equipment	73	80
Labor	27	20
Operational and maintenance charges per kilowatt hour	$0.17	$0.101
Project life ..... yr	15	20

Source: Reference *41*.

Table 12.—Alaska crude oil reserves, billion barrels

Area	Proven	Undiscovered	
		95-pct probability	Mean
North Slope	8.3	3.1	14.4
Bering Sea	ND	ND	1.8
Gulf of Alaska[1]	.6	.2	1.9
Other	ND	3.8	1.0
Total	8.9	7.1	19.1

ND Not determined. [1] Includes Cook Inlet.

Source: Reference *275*.

Four in-State refineries have the potential to supply 58 pct of Alaska's refined petroleum products, such as diesel and gasoline. Two refineries are located at Kenai and have capacities of 22,000 bbl/d and 48,500 bbl/d; a North Pole refinery has a capacity of 46,000 bbl/d; and a Prudhoe Bay refinery has a 14,000 bbl/d capacity (*9*). However, because of marketing and transportation considerations, much of the refined products are shipped out-of-State, and many required petroleum products are shipped into Alaska for consumption. The Alaska petroleum product distribution network is shown on figure 7.

HYDROELECTRIC POWER

Alaska possesses the highest undeveloped hydroelectric power potential in the entire United States. Hydroelectric power could be a viable alternative for a small-scale mining operation. Table 13 lists the costs of a small-scale hydroelectric plant in Alaska.

Hydroelectric power can provide an inexpensive and inexhaustible source of electricity. Power costs vary according to the scale of the facility and the size of the demand it serves.

Table 13.—Costs of a small-scale hydroelectric project in Alaska

		50 kW
Annual energy production	MW•h	307
1982 construction costs	10^3	$1,200
Capital cost breakdown, pct:		
Materials and equipment		40
Labor		60
Operational and maintenance charges per kilowatt hour		$4.80
Project life	yr	20

Source: Reference *41*.

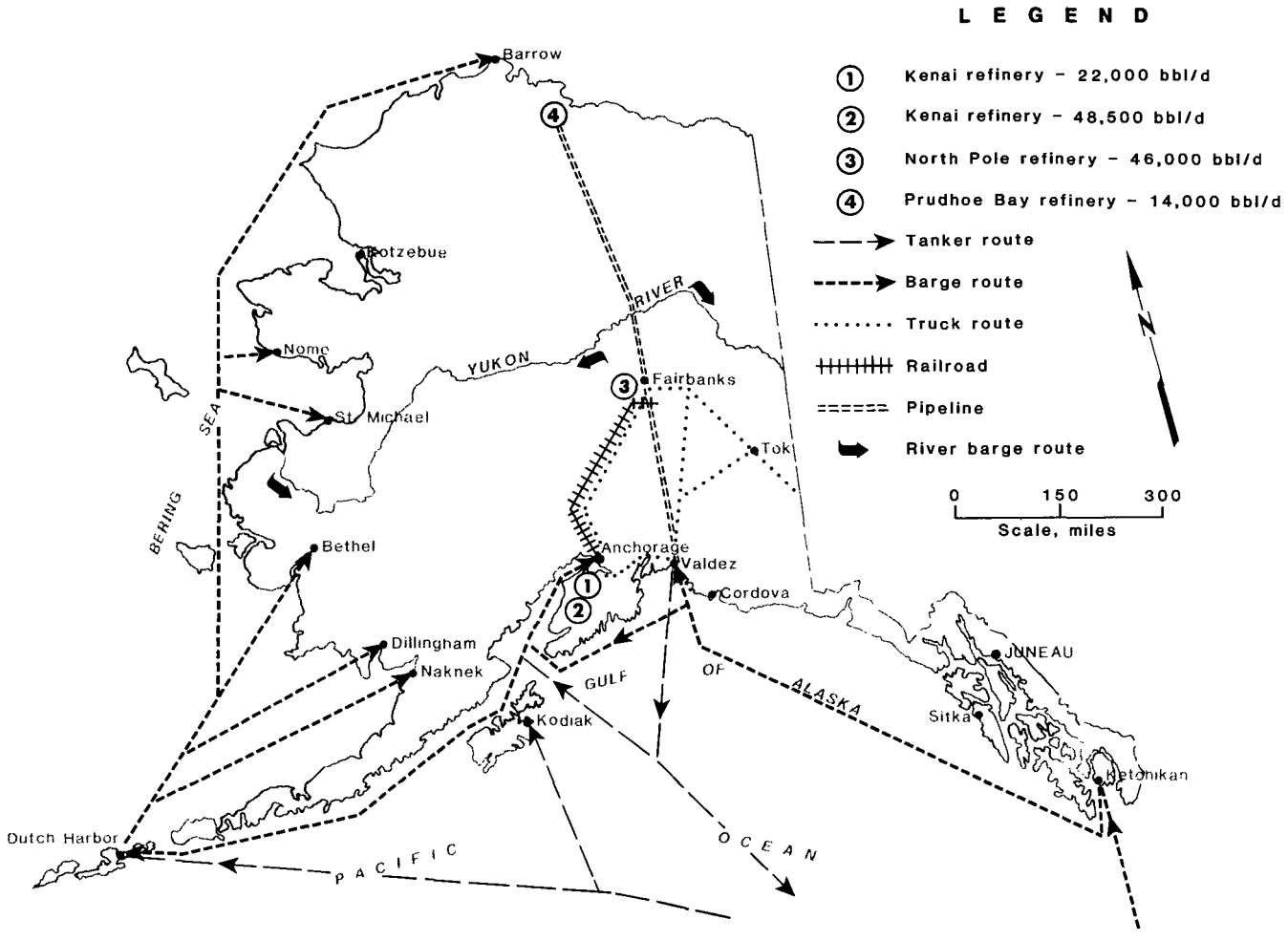

Figure 7.—Petroleum product distribution network in Alaska. (Source: reference *41*.)

COAL

Alaska has reserves of 425,270 million st of coal located in eight coalfields (*9*). Table 14 lists the proven, indicated, and hypothetical reserves of each major field in Alaska.

Table 14.—Coal reserves of major fields in Alaska, million short tons

	Proven	Indicated	Hypothetical
Northern fields	235.0	49,000-120,000	330,000
Nenana	861.1	6,000	8,700
Jarvis Creek	.3	13-76	0
Susitna (Beluga)	275.0	2,700-10,200	27,000
Matanuska	6.6	108-130	149
Bering River	.0	0	36-1,000
Herendeen Bay	.0	10-100	300
Chignik	.0	100	300
Total[1]	1,378.0	57,900-136,606	366,000-367,000

[1] Rounded.

Source: Reference *121*, p. 49.

Coals in Alaska are mostly subbituminous, though grading from lignite to anthracite in rank. At present, coal is used for electric power generation at Healy in interior Alaska. Future utilization of Alaskan coal depends upon development of markets that will be able to bear the transportation costs, and the economics of competing sources of energy.

TRANSPORTATION

Alaska's transportation system is extremely diverse, as it must move people and goods over great distances. The system includes rail, highway, air, and water transportation. Transportation in Alaska has developed because of the growth of economic activity in mining, petroleum, timber, defense, fisheries, and government.

The major population centers in Alaska have access to land, air, and water transportation systems. These cities are the hub of the transportation networks in which people and goods are moved into and out of the rural communities. The transportation network in turn has an effect on the development of the State's resources.

Rail

Alaska is served by one operating railroad, the Alaska Railroad, which is a public-owned line operated by the State of Alaska. Authorized by the U.S. Congress in 1914 and completed in 1924, the railroad was operated by the Federal Government until 1985. The railroad has 470 miles of track running from Seward to Anchorage to Fairbanks, and also 65 miles of branch lines (fig. 8). The railroad is a light-density line providing passenger and freight service. During 1984, the railroad hauled 8.3 million st of freight, of which 6.5 million st were sand and gravel, and 642,000 st were coal (*295*, p. 28). The track and bridges are built to accommodate cars carrying loads up to 100 st with most bulk (gravel and coal) cars limited to 80 st, to limit track wear (*14*).

Roads and Highways

Early roads and trails in Alaska were constructed to haul supplies to mining camps. These early routes followed native trails or were constructed by the miners, the U.S. Army, or the Alaska Road Commission. The Alaska road system contains 10,000 miles of highways, roads, and streets, as shown in figure 9.

This system connects the major population centers and provides access to the continental United States through Canada via the Alcan Highway. Jurisdiction of the roads is controlled by (1) the Federal Government with 28 pct of the mileage, (2) the State government with 54 pct, and (3) local governments with 18 pct (*14*).

The Alaska Department of Transportation and Public Facilities is authorized by statute to participate with mineral developers and other private entities in the construction and maintenance of access roads into mineral areas of valid commercial promise that are inaccessible to truck haulage, and into State lands programmed for surface disposal. In the case of mineral access roads, the road becomes the property of the State and as long as the road is open to the public, the State will participate in road maintenance. The State has no obligation to maintain access roads into State land disposal areas (*14*).

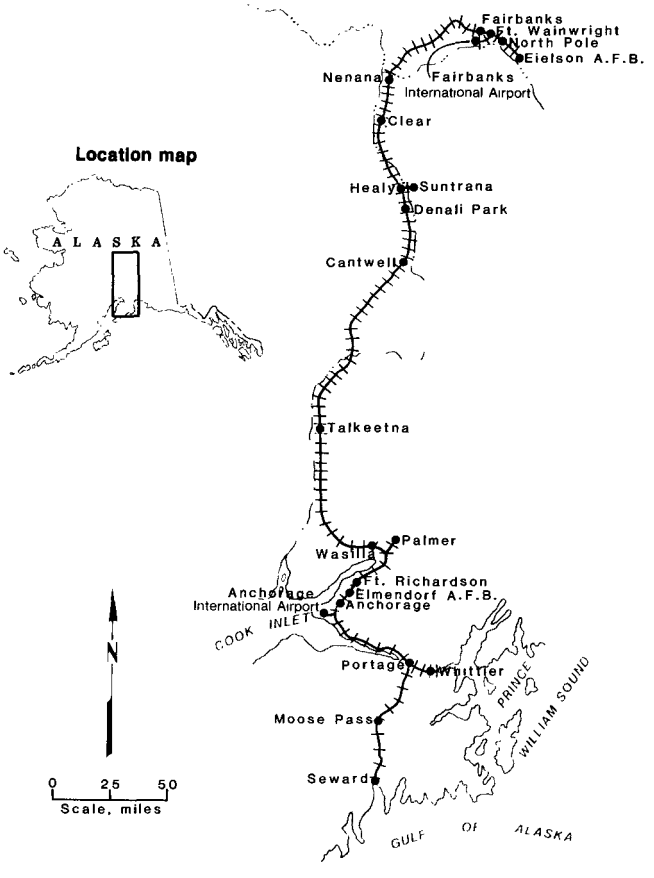

Figure 8.—Alaska railroad track system. (Source: reference *14*.)

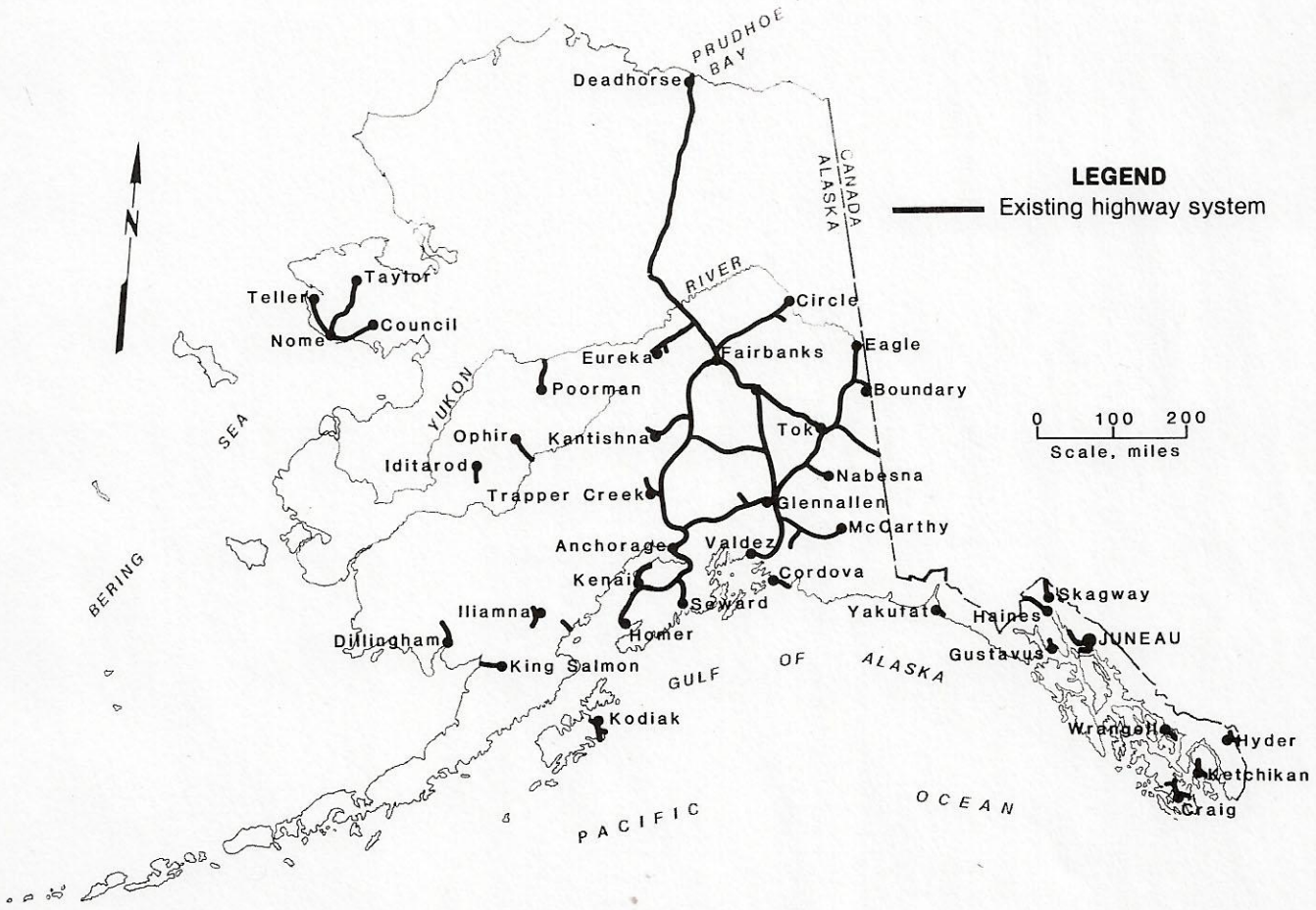

Figure 9.—Alaska highway system. (Source: reference *14*.)

Air

Alaska's air transportation system provides a vital link between the major population centers and rural Alaska. Alaska's large and sparsely populated land mass and the limited availability of alternate transportation modes in the rural areas have played a major role in the development of air transportation. Air transportation has proven extremely flexible, diverse, and unique in meeting the transportation requirements in Alaska.

Alaska has about 995 airports, with 195 in private use and 800 open to the public (*14*). International airports include Anchorage, Fairbanks, Juneau, and Ketchikan. Many community airports and smaller airstrips are unpaved gravel runways.

Air transportation is most commonly used in rural areas and in outlying metropolitan areas, where transportation of passengers and high-value freight is the largest usage. The types of airplanes used in the rural areas range from small single-propeller aircraft to large multipropeller and jet-engine aircraft, as well as rotorwing aircraft (helicopters).

Marine

The Alaska Marine Highway System serves those communities that are not connected by land highway or railroad networks. Service is provided to communities located along Alaska's coastline from southeast to the north shore and along the major rivers (Yukon and Kuskokwim) in the interior.

Anchorage, Whittier, and Valdez are the major ice-free port cities in Alaska. Other port cities, including Nome, Bethel, Barrow, and Fairbanks, are seasonal because of winter freezeup.

Alaska relies heavily on marine transportation as its primary means of cargo movement within the State and also to and from markets on the west coast of the United States and in various foreign countries. Transported materials include food, consumer goods, wood products, petroleum, bulk fertilizer, minerals, and fisheries products. Table 15 lists tariffs of selected commodities from Seattle to various Alaskan ports, and table 16 lists costs for barge charters from Seattle to various Alaskan ports. The approximate charge rate for a tug is $10,750/day and for a barge, $1,900/day (*14*).

Table 15.—1980 marine tariffs from Seattle to selected sites in Alaska, dollars per 100 lb

Minimum quantity, 10^3 lb	Akak	Anchorage	Bethel	Juneau	Ketchikan	Kotzebue	Nome	Sitka	Unalaska
FOODSTUFFS									
5	NAp	NAp	NAp	7.07	6.10	NAp	NAp	6.83	NAp
10	NAp	NAp	9.50	5.74	4.87	13.75	11.24	5.54	9.28
20	10.25	NAp	7.72	2.91	2.76	11.75	10.49	3.35	6.49
60	NAp	5.15	6.87	NAp	NAp	10.44	9.13	NAp	NAp
81	NAp	4.25	NAp	NAp	NAp	NAp	NAp	NAp	NAp
99	NAp	3.82	6.02	NAp	NAp	8.43	7.72	NAp	NAp
LUMBER									
10	NAp	NAp	8.43	5.02	4.37	11.79	11.26	5.22	8.17
24	NAp	NAp	6.39	2.09	2.01	9.03	8.62	2.99	7.37
38	11.48	5.90	6.18	NAp	NAp	NAp	8.41	NAp	4.97
72	NAp	4.02	NAp	NAp	1.92	NAp	NAp	NAp	NAp
114	NAp	2.94	NAp	NAp	NAp	NAp	NAp	NAp	NAp
MACHINERY									
16	10.39	NAp	9.71	4.39	4.06	14.13	13.45	4.66	9.01
24	7.07	10.78	7.76	3.97	3.63	11.35	10.83	4.14	5.45
30	NAp	7.68	NAp	NAp	NAp	NAp	NAp	NAp	5.05
42	NAp	7.13	NAp	NAp	NAp	NAp	NAp	NAp	NAp
72	NAp	5.80	7.52	NAp	NAp	NAp	10.06	NAp	NAp
120	NAp	4.74	NAp	NAp	NAp	NAp	NAp	NAp	NAp
IRON AND STEEL									
10	NAp	NAp	6.95	5.68	4.97	10.96	10.03	6.24	8.67
24	NAp	9.35	6.81	3.26	2.57	10.27	9.57	3.30	6.97
35	NAp	6.11	5.41	2.91	2.23	8.18	7.61	3.06	6.44
76	NAp	3.86	NAp	NAp	NAp	NAp	NAp	NAp	NAp
96	NAp	NAp	NAp	2.31	NAp	NAp	NAp	NAp	NAp
132	NAp	3.30	NAp	NAp	NAp	NAp	NAp	NAp	NAp

NAp Not Applicable.

Source: Reference *14*, p. 6-27.

Table 16.—1980 charter rates from Seattle to selected sites in Alaska

(Based on one 4,000-hp tug and two 300-ft barges)

	Cost	Time, days
Bethel	$450,000	25
Dillingham	450,000	25
Kodiak	300,000	15
Kotzebue	555,000	32
Nome	480,000	27
Unalaska	390,000	21

NOTE.—All rates include 5 days unloading time at destination. Does not include lighterage at Nome or Kotzebue, loading and lashing at Seattle (about $27/st) or Marine Cargo Insurance (2 to 7 pct of cargo value).

Source: Reference *14*, p. 6-29.

River

The first extensive transportation system into interior Alaska was along the State's major rivers, listed in table 17. The rivers have influenced the settlement of Alaska, especially along the Yukon and Kuskokwim Rivers.

Alaska's rivers are used to transport low-value, high-volume freight (gravel and fuel oil) to communities along the river during the ice-free summers (*14*).

REGULATION

Mining and mineral exploration are vital to the economies of numerous communities throughout the State as the industry brings jobs, revenues, and satellite industries.

Regulations governing the development of Alaska's mineral resources occur at both the Federal and State levels. State and Federal mining laws differ, so if there is any question as to the land status, it is best to stake according to both State and Federal laws. Any questions regarding land status can be directed to the Alaska Department of Natural Resources, Division of Lands, or to the U.S. Bureau of Land Management (BLM).

Federal mining laws are set forth in the U.S. Code of Federal Regulations (CFR), titles 30 and 43, amended December 15, 1977, 95th Congress, first session. Regulations pertaining to Federal claims are located in the CFR, title 43, part 3800, and are administered by the BLM (667). The major portion of the Federal mining laws deals with claim location (lode and placer), tunnel sites, mill sites, recordation, and assessment work. Patent may be given to claimants who hold valid mining claims and mill sites that meet the "prudent man" test (*397*).

Mining regulations on State of Alaska land are covered in Alaska statutes 38.05.185 through 38.05.280. The law is administered by the State Division of Lands under the regulations in title II, division I, chapter 6 of the Alaska Administrative Code (*397*). The State regulations deal mainly with claim location, recording, and assessment work. The State is required by the Statehood Act (Public Law 85-508) to retain title to minerals in all lands selected by the State, and by the Submerged Lands Act (Public Law 83-31) to minerals in tide, submerged, and shore lands. Alaska statutes 38.05.125 provides for reservation of minerals in all State lands except those acquired by gift, escheat, or foreclosure. Therefore, the State of Alaska may not sell or convey mineral rights to the private sector except for those in lands acquired by gift, escheat, or foreclosure.

Table 17.—Major navigable Alaska inland waterways

River	Restrictions
Chilkat	Navigable by shallow-draft vessels to village of Klukwan, 25 miles above mouth.
Kobuk	Controlling channel depth is about 5 ft through Hotham Inlet, 3 ft to Ambler, and 2 ft to Kobuk Village, about 210 river miles.
Koyukuk	Navigable by vessels drawing up to 3 ft to Allakaket during normally high river flow and to Bettles during occasional higher flows.
Kuskokwim	Navigable by 18-ft draft ocean-going vessels from mouth upriver 65 miles to Bethel. Shallow-draft (4-ft) vessels can ascend river to mile 465. McGrath at mile 400.
Kvichak	Navigable for vessels of 10-ft draft to Alagnak River, 22 miles above the mouth of Kvichak River. Remainder of river (28 miles) navigable by craft drawing 2 to 4 ft depending on stage of river. Drains Lake Iliamna, which is navigable an additional 70 miles.
Naknek	Navigable for vessels of 12-ft draft for 12 miles with adequate tide. Vessels with 3-ft draft can continue an additional 7.5 miles.
Noatak	Shallow-draft barges can ascend to a point about 18 miles below Noatak village. Shallow-draft vessels can continue on to Noatak.
Nushagak	Navigable by small vessels of 2.5-ft draft to Nunachuak about 100 miles above the mouth. Shallow-draft ocean-going vessels can navigate to mouth of Wood River, mile 84.
Porcupine	Navigable to Old Crow, Yukon Territory, by vessels drawing 3 ft, during spring runoff and fall rain floods.
Stikine	Navigable (May 1 to Oct. 15) from mouth 165 miles to Telegraph Creek, B.C., by shallow-draft, flat-bottom river boats.
Susitna	Not navigable by ocean-going vessels. Stern wheelers and shallow-draft, flat-bottom riverboats can navigate to confluence of Talkeetna River, 75 miles upstream, but cannot cross bars at mouth of river.
Tanana	Navigable by shallow-draft (4-ft) flat-bottom vessels and barges from the mouth to Nenana and by smaller river craft to the Chena River 201 miles above the mouth. Craft of 4-ft draft can navigate to Chena River on high water to University Avenue Bridge in Fairbanks.
Yukon	Navigable by shallow-draft, flat-bottom river boats from the mouth to near the head of Lake Bennett. It cannot be entered or navigated by ocean-going vessels. Controlling depths are 7 ft to Stevens Village and 3 to 5 ft thereon to Fort Yukon.

Source: U.S. Army Corps of Engineers.

Those minerals not covered under the locatable mineral laws may be obtained through the leasable mineral laws. Mineral rights for leasable minerals located on Federal, State, or private lands are reserved by the Federal or State Governments. Leasable minerals include oil, natural gas, oil shale, asphalt, bitumen, coal, phosphate, sodium, and potassium; in the State of Alaska, sulfur is also included.

Water rights in Alaska are covered by the Water Use Act of 1966. The law (1) applies to all waters in the State including those on Federal, State, and private lands, (2) recognizes existing water rights, (3) provides acquisition of water rights under a permit system, and (4) allows sale or transfer of water rights. The Water Use Act is administered by the State Division of Land and Water Management, Department of Environmental Conservation. The State of Alaska Department of Fish and Game has jurisdiction of all streams that have been specified as important to the fishing industry (*397*).

A list of permits required by the mining industry may be obtained from the State of Alaska Department of Commerce and Economic Development, Office of Mineral Development.

TAXATION

The Alaska mineral tax structure is made up of three different taxes: (1) mining license tax, (2) State corporate income tax, and (3) local property taxes (*972*).

The mining license tax is a special tax on mining activity, which requires that all new mining operators obtain licenses. New operations, except sand and gravel, are exempt for the first 3.5 yr after production begins. The tax is based on net income with allowable deductions including operating costs, royalties, depreciation, depletion, development costs, taxes (other than license tax), and Federal income tax. Net income is taxed at the following rates: $40,000 to $50,000 at 3 pct, $50,000 to $100,000 at 5 pct of excess over $50,000 plus $1,500, $100,000-plus at 7 pct of excess over $100,000 plus $4,000 (*972*).

The State corporate income tax is a tax levied on net income derived from sources within the State. No allowance is made for Federal income taxes. Table 18 lists the Alaska corporate tax rates.

Table 18.—Alaska corporate tax rates

Taxable income	Base tax	Rate over set amount	
		pct	Amount
< $10,000	0	1	0
$10,000-$20,000	$100	2	$10,000
$20,000-$30,000	300	3	20,000
$30,000-$40,000	600	4	30,000
$40,000-$50,000	1,000	5	40,000
$50,000-$60,000	1,500	6	50,000
$60,000-$70,000	2,100	7	60,000
$70,000-$80,000	2,800	8	70,000
$80,000-$90,000	3,600	9	80,000
>$90,000	4,500	9.4	90,000

NOTE.—As an example, taxable income of $15,000 has a base tax of $100 plus 2 pct of the taxable income over $10,000, or $100, which gives a total tax of $200.

Source: Reference *972*, p. 10.

The State of Alaska does not administer a property tax, but municipalities and boroughs are authorized to levy taxes on real and personal property. The property is assessed on January 1 of every year at its full and true value, which is the estimated price the property would bring in an open market under prevailing market conditions. Property tax rates are fixed locally, with a maximum of 3 pct for cities (*972*).

STATE MINERAL DEVELOPMENT INCENTIVES

The State of Alaska has expressed interest in the development of a long-term minerals industry to provide for sustained economic growth. Presently the oil industry provides the majority of the State's royalty income. Recognizing the fact that declining oil revenues are inevitable in the future, some steps have been taken to provide incentive for mineral development.

Mining Revolving Loan Fund

The mining loan fund was established in 1980 by the State (AS27.09.010-.060) in order to provide low-interest

loans to underwrite advanced mineral exploration, development, and mining within Alaska. The program is administered by the Alaska Department of Commerce and Economic Development, Division of Investments. As of June 1985, a total of 54 loans with a value of $20.3 million were outstanding. The balance of the fund as of May 30, 1985, was approximately $31.5 million.

Individual borrowers must be residents of the State and have at least 5 yr experience in prospecting or mining in Alaska. In partnerships, Alaskan residents must make up at least 50 pct, with at least half of the partners having 5 yr experience in the State. A corporation is eligible if at least 51 pct of its shares are held by persons having at least 5 yr mining or prospecting experience in the State and at least 51 pct of its shares are held by persons who are residents of Alaska. Loans may be granted for up to $5 million at an interest rate of 10 pct per annum with a maximum term of 15 yr. No loan may exceed 75 pct of the value of the collateral offered. Terms of all loans are fixed by a loan committee appointed by the Commissioner of the Department of Commerce and Economic Development. Approval of loans requires a majority consensus of the loan committee.

The borrower pays all costs incurred in processing the loan application but is not required to pay a commitment fee, closing fee, or other costs not directly related to the administrative expense of processing the loan application. Principal repayment of loans other than those for placer mining commences not later than 1 yr after production begins or 5 yr from the date of the loan, whichever comes first. Principal repayment of placer loans must commence by the end of the second placer mining season after the loan is made. Accrual of interest for all loans begins when the loan is made, and interest must be repaid each year.

Placer Mining Demonstration Grants

Placer mining demonstration grants are an example of the State of Alaska's willingness to encourage modern, environmentally sound mineral development. Grants are designed to provide funds for research in innovative placer mining methods to decrease environmental damage. The program was initiated in July 1984, and a total of 81 applications were received prior to the February 1985 deadline. A total of 30 grants worth $2.7 million were issued by the State Departments of Environmental Conservation and Natural Resources.

Both reduction in environmental damage and increased gold recovery should result from the program. Increased gold recovery reduces the probability that a stream will be continually remined, in addition to benefiting the mining operation's revenues.

Special Assistance

In keeping with its commitment to encourage mineral development, the Alaska legislature passed two bills in 1985 designed to assist in the development of the Red Dog deposit, 90 miles north of Kotzebue. The State will finance a $65 million port facility and a $85 million road from the coast to the mine site. Cominco Alaska, operators of the Red Dog project, had stated that such assistance was required in order to proceed with development of the high-grade zinc-lead-silver deposit. The State investment will be repaid by user fees and taxes and should return about $620 million over the proposed 30-yr operating period of the mine. Construction of the road and port may prompt development of additional base-metal deposits in the area.

ABSTRACTS OF SELECTED DEPOSITS IN ALASKA

As previously described, the heart of this publication consists of single-page, site-specific deposit abstracts for 67 selected deposits in Alaska. Figure 1 and tables 1 and 2 serve as indexes for the deposit abstract section.

ALASKA CHIEF—COPPER

Alternate name: Peacock Nos. 1-2
Map location No.: 165

Commodities: Cu, Ag, Au, Zn, Ni, Co

LOCATION-OWNERSHIP

Quadrangle	Mount Fairweather.
Mining district	Juneau.
Elevation	366 m.
Topography	Very rugged.
Domain	National wilderness.
Owner	The Nature Conservancy.
Reference point	Claim.
Meridian	Copper River.
Tract	Sec. 1, T 40 S, R 56 E.
Latitude	58°26′14″ N.
Longitude	136°5′25″ W.

GEOLOGY

Type of ore body	Replacement.
Origin	Metasomatic.
Shape of ore body	Massive.
Ore controls	Contact zone.
Mineral names	Chalcopyrite, bornite, azurite, malachite, sphalerite, epidote, goethite, calcite, orthoclase, pyrite, pyrrhotite, quartz, chlorite, zoisite.
Host formation	Tidal and Rendu.
Geologic age	Devonian.
Deformation	Metamorphism, intrusion.
Age of deformation	Mesozoic.
Rock types	Skarn, limestone, marble, hornfels, diorite, quartz monzonite.

DEVELOPMENT

Current status	Explored prospect.
Type of operation	Prospect.
Year of discovery	1899.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	Less than 3 km.
Road requirement	Less than 10 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	25,400 mt	1.00 pct Cu, 68.60 g/mt Ag	1978	*72*, p. C353.

REFERENCES

40, No. F-12; *55*, p. 162; *56*; *72*, pp. C353, D16, plates 1A, 1B, 2; *198*; *233*, pp. 7-8; *519*, pp. 3, 5, 45-48, 69, 73; *548*, p. 1; *695*, p. 37; *696*, pp. 72-73; *767*, p. 49, plate 1; *997*, pp. 221-222.

USGS quadrangle map	Mount Fairweather (B-1), 15′.
USBM MAS sequence No	0021110066.
MSHA Mid No	Not available.
USGS MRDS No	A002074.
Alaska Kardex No	111-028, 111-054.

APOLLO—GOLD

Alternate name: Unga Island
Map location No.: 211

Commodities: Au, Ag, Cu, Pb, Zn

LOCATION-OWNERSHIP

Quadrangle ..... Port Moller.
Mining district ..... Alaska Peninsula.
Elevation ..... 30 m.
Topography ..... Rolling.
Domain ..... BLM-administered.

Owner ..... Alaska Apollo Gold Mines Ltd.

Reference point ..... Claim.
Meridian ..... Seward.
Tract ..... Sec. 28, T 58 S, R 74 W.
Latitude ..... 55°11'23" N.
Longitude ..... 160°33'25" W.

GEOLOGY

Type of ore body ..... Fissure vein, shear zone, stockwork.
Origin ..... Hydrothermal.
Shape of ore body ..... Tabular.
Ore controls ..... Fracturing, igneous.
Mineral names ..... Gold, chalcopyrite, sphalerite, galena, pyrite, quartz.

Host formation ..... Unnamed igneous.
Geologic age ..... Tertiary.
Deformation ..... Major faulting, intrusion.
Age of deformation ..... Tertiary.
Rock types ..... Andesite, dacite, basalt.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Underground.

Year of discovery ..... 1891.
Discovery method ..... Ore-mineral in place.
First production year ..... 1891.
Last production year ..... 1904.

Distance to water supply ..... On-site.
Road requirement ..... Less than 10 km.
Distance to power supply ..... On-site.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	453,600 mt.....	10.30 g/mt Au, 34.30 g/mt Ag	1984	*295*, p. 11.

REFERENCES

40, No. D-92; *44*, pp. 21, 125-126; *45*, pp. 149-150; *47*, p. 22; *55* p. 5; *77*, p. 47; *79*, pp. 49-50; *84*, pp. 28-29; *86*, p. 66; *91*, p. 6; *95*, p. 34; *96*, p. 33; *97*, p. 28; *98*, p. 38; *103*; *105*, p. 33; *120*, pp. 12, 13, 17, 18; *121*, p. 17; *204*; *277*, p. 10; *295*, p. 11; *296*, p. 13; *490*, p. 23; *521*; *812*; *829*, p. 24; *837*, p. 28; *915*; *934*, pp. 196, 199; *955*, p. 111; *963*.

USGS quadrangle map ..... Port Moller (A-2), 15'.
USBM MAS sequence No ..... 0021380012.
MSHA Mid No ..... 5001421.
USGS MRDS No ..... A002675.
Alaska Kardex No ..... 138-002, 138-003.

ARCTIC CAMP—COPPER

Alternate name: Arctic
Map location No.: 16

Commodities: Cu, Zn, Pb, Ag, Au

LOCATION-OWNERSHIP

Quadrangle	Ambler River.	Reference point	Mineralized zone.
Mining district	Ambler.	Meridian	Kateel River.
Elevation	975 m.	Tract	Sec. 35, T 21 N, R 11 E.
Topography	Rugged.	Latitude	67°10'39" N.
Domain	BLM-administered.	Longitude	156°22'44" W.
Owner	Kennecott Corp.		

GEOLOGY

Type of ore body	Stratiform, stratabound.	Host formation	Unnamed metamorphics.
Origin	Metamorphism, sedimentation.	Geologic age	Paleozoic.
Shape of ore body	Tabular.	Deformation	Metamorphism, faulting.
Ore controls	Bedding, lithology.	Age of deformation	Pre-Devonian.
Mineral names	Chalcopyrite, sphalerite, pyrite, pyrrhotite, chalcocite, bornite, galena, tennantite, quartz, talc, feldspar, calcite, epidote, graphite, muscovite, chlorite, biotite, tremolite, microcline, garnet.	Rock types	Schist, phyllite.

DEVELOPMENT

Current status	Explored deposit.	Distance to water supply	On-site.
Type of operation	Prospect.	Road requirement	More than 100 km.
Year of discovery	1965.	Distance to power supply	Do.
Discovery method	Ore-mineral in place.		
First production year	Not applicable.		
Last production year	Do.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	30,838,000 mt	4.00 pct Cu, 5.50 pct Zn, 1.00 pct Pb, 51.40 g/mt Ag. Reserves estimated 27,200,000-31,750,000 mt.	1976	*811*, p. 14.
Do	30,000,000 mt	4.00 pct Cu, 5.50 pct Zn, 1.00 pct Pb, 51.40 g/mt Ag, 0.65 g/mt Au.	1978	*864*, p. 34.
Do	36,288,000 mt	4.00 pct Cu, 5.50 pct Zn, 0.80 pct Pb, 54.80 g/mt Ag, 0.69 g/mt Au. Reserves estimated 31,750,000-36,288,000 mt.	1984	*295*, pp. 6, 42.

REFERENCES

15, pp. 7-8; *16*, pp. 27-30; *40*, No. A-24; *120*, p. 8; *121* pp. 10, 38; *269*, p. 79; *274*; *295*, pp. 6, 42; *296*, p. 6; *366*; *439*; *508*; *650*; *654*; *811*; *864*, pp. 31-33, 34, 160-163; *982*.

USGS quadrangle map	Ambler River, 1:250,000.
USBM MAS sequence No	0020280004.
MSHA Mid No	5001241.
USGS MRDS No	Not available.
Alaska Kardex No	028-044.

BALBOA BAY—COPPER

Alternate name: Pyramid
Map location No.: 212

Commodities: Cu, Mo

LOCATION-OWNERSHIP

Quadrangle ..... Port Moller.
Mining district ..... Alaska Peninsula.
Elevation ..... 152 m.
Topography ..... Hilly.
Domain ..... Federal.

Owner ..... U.S. Fish and Wildlife Service.

Reference point ..... Mineralized zone.
Meridian ..... Seward.
Tract ..... Sec. 14, T 53 S, R 74 W.
Latitude ..... 55°35'20" N.
Longitude ..... 160°35'5" W.

GEOLOGY

Type of ore body ..... Shear zone.
Origin ..... Hydrothermal.
Shape of ore body ..... Tabular, irregular.
Ore controls ..... Fracturing, faulting.
Mineral names ..... Chalcopyrite, sphalerite, galena, pyrite, quartz.

Host formation ..... Unnamed igneous.
Geologic age ..... Tertiary.
Deformation ..... Major faulting, intrusion.
Age of deformation ..... Tertiary.
Rock types ..... Andesite, dacite, basalt.

DEVELOPMENT

Current status ..... Raw prospect.
Type of operation ..... Prospect.

Year of discovery ..... Not available.
Discovery method ..... Do.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... On-site.
Road requirement ..... Less than 10 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	90,700,000 mt	0.50 pct Cu, 0.03 pct Mo. Reserve includes Stepovak Bay, San Diego, Pyramid.	1979	*269*, p. 84.

REFERENCES

40, No. D-91; *44*, pp. 21, 129; *45*, p. 152; *55*, pp. 6-7; *85*, p. 35; *121*, p. 12; *204*; *269*, p. 84; *521*; *955*, p. 112.

USGS quadrangle map ..... Port Moller (C-2), 15'.
USBM MAS sequence No ..... 0021380006.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A002676.
Alaska Kardex No ..... 138-006.

BARTHOLOMAE—GOLD

Alternate name: Ryan Lode
Map location No.: 56

Commodities: Au, Sb, Pb

LOCATION-OWNERSHIP

Quadrangle	Fairbanks.
Mining district	Fairbanks.
Elevation	304 m.
Topography	Hilly.
Domain	State.
Operator	Citigold.
Reference point	Mineralized zone.
Meridian	Fairbanks.
Tract	Sec. 32, T 1 N, R 2 W.
Latitude	64°51'52" N.
Longitude	147°59'18" W.

GEOLOGY

Type of ore body	Fissure vein, shear zone, replacement.
Origin	Hydrothermal, oxidation.
Shape of ore body	Tabular, irregular.
Ore controls	Fracturing, faulting.
Mineral names	Gold, stibnite, arsenopyrite, galena, quartz.
Host formation	Birch Creek Schist.
Geologic age	Paleozoic.
Deformation	Metamorphism, faulting, intrusion.
Age of deformation	Mesozoic.
Rock types	Schist.

DEVELOPMENT

Current status	Explored deposit.
Type of operation	Surface-underground.
Year of discovery	1911.
Discovery method	Ore-mineral in place.
First production year	1911.
Last production year	1976.
Distance to water supply	On-site.
Road requirement	None.
Distance to power supply	On-site.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	195,000 mt	13.69 g/mt Au	1967	*916*, p. 1.
Indicated	364,000 mt			
Inferred	455,000 mt			

REFERENCES

65; *74*, p. 15; *80*, p. 45; *81*, p. 30; *97*, p. 33; *105*, p. 35; *106*, p. 81; *121*, p. 16; *159*, p. 323; *163*, p. 17; *173*; *295*, p. 10; *296*, p. 8; *329*; *410*, pp. 135-142; *453*, p. 11; *475*, pp. 17-18; *534*, pp. 12, 40; *560*, pp. 412-413; *821*, p. 207; *822*, p. 193; *825*, p. 15; *826*, p. 17; *827*, p. 20; *828*, p. 19; *829*, pp. 18-19; *832*, p. 20; *836*, p. 26; *837*, p. 23; *838*, p. 23; *916*; *944*.

USGS quadrangle map	Fairbanks (D-2) SW, 7.5'.
USBM MAS sequence No	0020580018.
MSHA Mid No	5000365.
USGS MRDS No	A001128.
Alaska Kardex No	058-008, 058-154, 058-156.

BAULTOFF CREEK—COPPER

Alternate name: Not available
Map location No.: 106

Commodity: Cu

LOCATION-OWNERSHIP

Quadrangle ..... Nabesna.
Mining district ..... Chisana.
Elevation ..... 1,768 m.
Topography ..... Very rugged.
Domain ..... Federal.

Owner ..... Gerald Wood.

Reference point ..... Mineralized zone.
Meridian ..... Copper River.
Tract ..... Sec. 21, T 4 N, R 23 E.
Latitude ..... 62°6'20" N.
Longitude ..... 141°13'0" W.

GEOLOGY

Type of ore body ..... Stockwork, disseminated.
Origin ..... Hydrothermal.
Shape of ore body ..... Irregular, massive.
Ore controls ..... Igneous.
Mineral names ..... Chalcopyrite, bornite, pyrite, magnetite, albite, quartz.

Host formation ..... Nabesna Pluton.
Geologic age ..... Cretaceous.
Deformation ..... Intrusion, metamorphism.
Age of deformation ..... Cretaceous.
Rock types ..... Diorite.

DEVELOPMENT

Current status ..... Explored prospect.
Type of operation ..... Prospect.

Year of discovery ..... Not available.
Discovery method ..... Do.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... Less than 3 km.
Road requirement ..... Less than 50 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	145,100,000 mt	0.20 pct Cu	1979	*269*, p. 83.

REFERENCES

40, No. E-56; *269*, p. 83, No. 144; *417*; *522*.

USGS quadrangle map ..... Nabesna (A-1), 15'.
USBM MAS sequence No ..... 0020780041.
MSHA Mid No ..... Not available.
USGS MRDS No ..... Do.
Alaska Kardex No ..... 078-085.

BEATSON—COPPER

Alternate name: Beatson-Bonanza
Map location No.: 136

Commodities: Cu, Ag, Au, Zn

LOCATION-OWNERSHIP

Quadrangle	Seward.
Mining district	Prince William Sound.
Elevation	46 m.
Topography	Hilly.
Domain	Private.
Owner	Kennecott Corp.
Reference point	Mineralized zone.
Meridian	Seward.
Tract	Sec. 33, T 1 S, R 9 E.
Latitude	60°3′0″ N.
Longitude	147°53′55″ W.

GEOLOGY

Type of ore body	Replacement, fissure vein.
Origin	Hydrothermal.
Shape of ore body	Lenticular, massive.
Ore controls	Igneous, faulting.
Mineral names	Chalcopyrite, pyrite, copper, quartz, epidote, siderite, sphalerite, galena, gold, silver, arsenopyrite, feldspar, chlorite, ankerite, calcite.
Host formation	Orca Group.
Geologic age	Post-Ordovician.
Deformation	Faulting, intrusion, minor folding.
Age of deformation	Jurassic.
Rock types	Graywacke, argillite, greenstone, conglomerate, limestone.

DEVELOPMENT

Current status	Past producer.
Type of operation	Surface-underground.
Year of discovery	1897.
Discovery method	Ore-mineral in place.
First production year	1899.
Last production year	1930.
Distance to water supply	On-site.
Road requirement	None.
Distance to power supply	Less than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	4,536,000 mt	1.00 pct Cu, 34.30 g/mt Ag	1984	*295*, p. 45, No. 80.

REFERENCES

40, No. E-85; *47*, p. 33; *51*; *55*; *74*, pp. 28, 38; *76*, p. 62; *77*, p. 45; *79*, p. 44; *80*, pp. 19, 21, 39-40; *81*, pp. 10, 23-24; *85*, pp. 12-14, 21-24; *92*, p. 27; *95*, p. 39; *96*, pp. 31, 81; *97*, pp. 27-28; *98*. p. 34; *105*, pp. 15, 28, 119; *106*, pp. 69, 77; *121*, pp. 11, 36; *144*, pp. 13-14, 60-61; *258*; *269*, p. 83, No. 160; *345*, pp. 25-26, 205-206, 219-220, 269; *358*, pp. 82, 85-87; *359*; *360*, pp. 88-89; *363*, pp. 52-54, 56-58, 63-67; *437*, pp. 126-129; *455*, pp. 201-202, 204-206, 208-209; *460*, pp. 240, 243; *461*, pp. 131-133; *462*, pp. 138-139; *463*, p. 184; *464*, pp. 144-145; *496*; *522*; *533*, pp. 18, 31; *534*, pp. 32-33; *593*, pp. 228, 262, 266, 281, 298-300, 302; *600*, pp. 27-28; *609*, p. 178; *610*; *617*, pp. 63-65; *799*, pp. 419-420; *823*, p. 20; *824*, pp. 32, 35; *825*, pp. 45-46; *826*, pp. 53-54; *827*, p. 59; *828*, p. 61; *829*, pp. 60-61; *830*, p. 57; *851*, pp. 41, 52; *852*, pp. 47-48; *869*, pp. 110, 118.

USGS quadrangle map	Seward (A-3), 15′.
USBM MAS sequence No	0020950009.
MSHA Mid No	Not available.
USGS MRDS No	A002937.
Alaska Kardex No	095-052, 095-088, 095-227, 095-233, 095-274.

BIG HURRAH—GOLD

Alternate name: King Solomon
Map location No.: 52

Commodities: Au, Ag, W

LOCATION-OWNERSHIP

Quadrangle ..... Solomon.
Mining district ..... Nome.
Elevation ..... 84 m.
Topography ..... Gentle.
Domain ..... BLM-administered.

Owner-operator ..... Cornwall Pacific-Night Hawk Resources, Ltd.

Reference point ..... Entrance to underground workings.
Meridian ..... Kateel River.
Tract ..... Sec. 3, T 10 S, R 28 W.
Latitude ..... 64°39'15" N.
Longitude ..... 164°13'45" W.

GEOLOGY

Type of ore body ..... Fissure vein.
Origin ..... Hydrothermal.
Shape of ore body ..... Lenticular.
Ore controls ..... Faulting.
Mineral names ..... Gold, silver, scheelite, quartz.

Host formation ..... Hurrah Slate.
Geologic age ..... Devonian.
Deformation ..... Metamorphism, major folding, faulting.
Age of deformation ..... Devonian.
Rock types ..... Slate.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Underground.

Year of discovery ..... 1901.
Discovery method ..... Ore-mineral in place.
First production year ..... 1903.
Last production year ..... 1953.

Distance to water supply ..... On-site.
Road requirement ..... Less than 10 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	21,100 mt	21.60 g/mt Au, 13.00 g/mt Ag, 0.10 pct WO_3	1931	*878*, p. 2.
Indicated	57,100 mt			
Inferred	26,300 mt			
Not reported in reference	680,000 mt			

REFERENCES

37, p. 43; *40*, No. A-54; *42*, pp. 2, 5-6, 12-14, 21, 29; *55*, pp. 126-127; *78*, p. 69; *86*, p. 73; *91*, p. 6; *95*, p. 38; *99*, p. 22; *120*, p. 11; *150*, pp. 163, 173-174, 179, 198, 200-204; *171*, pp. 1-2, 4; *211*; *215*, p. 89; *216*, p. 45; *241*, p. 23; *255*, pp. 223, 228-232; *269*, p. 80, No. 46; *295*, p. 8; *396*, p. 360; *430*; *434*; *490*, pp. 16, 19; *595*, p. 137; *736*, p. 2; *747*, pp. 4-5; *785*, pp. 72, 95-96; *786*, p. 5; *814*, pp. 59, 93, 139, 143-147; *815*, pp. 146-147, 155; *817*, pp. 234-237; *827*, p. 23; *828*, p. 23; *829*, p. 24; *830*, p. 22; *835*, p. 33; *836*, p. 31; *845*, p. 292; *852*, p. 55; *971*, pp. 1-2, 4; *978*, p. 5; *979*, pp. 7-8.

USGS quadrangle map ..... Solomon (C-5), 15'.
USBM MAS sequence No ..... 0020530057.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A003243.
Alaska Kardex No ..... 053-022, 053-023, 053-207.

BONANZA CREEK—GOLD

Alternate name: Edward Vogt
Map location No.: 38

Commodities: Au, Ag, Sn

LOCATION-OWNERSHIP

Quadrangle ..... Tanana.
Mining district ..... Melozitna.
Elevation ..... 183 m.
Topography ..... Hilly.
Domain ..... BLM-administered.

Owner ..... Edward Vogt Estate.

Reference point ..... Claim.
Meridian ..... Fairbanks.
Tract ..... Sec. 19, T 6 N, R 18 W.
Latitude ..... 65°19'50" N.
Longitude ..... 151°20'0" W.

GEOLOGY

Type of ore body ..... Placer.
Origin ..... Sedimentation.
Shape of ore body ..... Irregular.
Ore controls ..... Bedding, fracturing.
Mineral names ..... Gold, cassiterite, quartz, magnetite, ilmenite.

Host formation ..... Alluvium.
Geologic age ..... Quaternary.
Deformation ..... Not available.
Age of deformation ..... Do.
Rock types ..... Gravel, silt.

DEVELOPMENT

Current status ..... Explored prospect.
Type of operation ..... Placer.

Year of discovery ..... 1902.
Discovery method ..... Ore-mineral not in place.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... On-site.
Road requirement ..... Less than 50 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	45,000 m^3	0.36 g/m^3 Au, 28.70 g/m^3 Sn. Ag mentioned in past production but not in assay.	1945	*895*, p. 8.

REFERENCES

162, pp. 5-13; *213*; *563*, p. 192; *887*, p. 7; *895*.

USGS quadrangle map ..... Tanana (B-3), 15'.
USBM MAS sequence No ..... 0020480012.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A003524.
Alaska Kardex No ..... 048-026.

BOND CREEK—COPPER

Alternate name: Taku 1-27
Map location No.: 103

Commodities: Cu, Mo

LOCATION-OWNERSHIP

Quadrangle	Nabesna.
Mining district	Chisana.
Elevation	2,042 m.
Topography	Very rugged.
Domain	Federal.
Owner-operator	Kennecott Corp.
Reference point	Mineralized zone.
Meridian	Copper River.
Tract	Sec. 19, T 5 N, R 15 E.
Latitude	62°12'0" N.
Longitude	142°42'0" W.

GEOLOGY

Type of ore body	Stockwork, disseminated.
Origin	Hydrothermal.
Shape of ore body	Massive, irregular.
Ore controls	Igneous.
Mineral names	Chalcopyrite, molybdenite, biotite, chlorite, feldspar, quartz, pyrite, galena, sphalerite.
Host formation	Nabesna Pluton.
Geologic age	Cretaceous.
Deformation	Intrusion, metamorphism.
Age of deformation	Cretaceous.
Rock types	Diorite.

DEVELOPMENT

Current status	Explored deposit.
Type of operation	Prospect.
Year of discovery	1962.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	Less than 3 km.
Road requirement	Less than 50 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	453,600,000 mt	0.40 pct Cu, 0.03 pct MoS_2. Grade ranges 0.3-0.5 pct Cu.	1979	*269*, p. 83.

REFERENCES

40, No. E-50; *121*, p. 11; *269*, p. 83, No. 145; *295*, p. 45, No. 73; *417*; *522*; *701*; *707*; *710*; *881*.

USGS quadrangle map	Nabesna (A-4), 15'.
USBM MAS sequence No	0020780016.
MSHA Mid No	Not available.
USGS MRDS No	Do.
Alaska Kardex No	078-065.

BORNITE—COPPER

Alternate name: Ruby Creek
Map location No.: 11

Commodities: Cu, Au, Pb, Co, Zn

LOCATION-OWNERSHIP

Quadrangle	Ambler River.
Mining district	Shungnak.
Elevation	280 m.
Topography	Hilly.
Domain	BLM-administered.
Owner-operator	Kennecott Corp.
Reference point	Entrance to underground workings.
Meridian	Kateel River.
Tract	Sec. 8, T 19 N, R 9 E.
Latitude	67°4'0" N.
Longitude	156°56'25" W.

GEOLOGY

Type of ore body	Replacement, breccia fill.
Origin	Hydrothermal.
Shape of ore body	Tabular.
Ore controls	Lithology, bedding.
Mineral names	Chalcopyrite, bornite, chalcocite, pyrite, tennantite, sphalerite, galena, pyrrhotite, dickite, barite, siderite.
Host formation	Unnamed metasediments.
Geologic age	Middle Devonian.
Deformation	Faulting, major folding, metamorphism, intrusion.
Age of deformation	Cretaceous.
Rock types	Limestone, dolomite, marble, phyllite, schist.

DEVELOPMENT

Current status	Explored deposit.
Type of operation	Underground.
Year of discovery	1948.
Discovery method	Geological inference.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	More than 10 km.
Road requirement	More than 100 km.
Distance to power supply	Do.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	90,718,000 mt	1.20 pct Cu. Estimate appears large for dimensions of ore body.	1961	*507*.
Do	4,536,000 mt	4.00 pct Cu. Cu grade ranges 4-12 pct	1984	*295*, p. 42.
Do	36,288,000 mt	2.00 pct Cu.	1984	*295*, p. 42.

REFERENCES

37, p. 24; *40*, No. A-27; *55*, pp. 105-106; *73*, p. 180; *85*, p. 36; *120*, p. 8; *121*, pp. 9, 19, 38, 39; *174*; *215*, pp. 57, 60; *216*, pp. 33, 35; *237*; *248*; *249*; *261*, pp. 38-41; *295*, pp. 6, 42, No. 8; *296*, p. 6; *306*; *341*, pp. 39-54, 58, 63; *342*, pp. 3-6, 9; *346*; *412*; *489*; *543*, pp. 39-40; *545*; *546*; *650*; *772*; *841*, pp. 147-149, 153; *848*, pp. 300-303; *850*, pp. 339-341; *912*; *955*, pp. 48-49.

USGS quadrangle map	Ambler River, 1:250,000.
USBM MAS sequence No	0020280002.
MSHA Mid No	5000485.
USGS MRDS No	A000006.
Alaska Kardex No	028-005, 028-008A, 028-008B, 028-009A, 028-009B, 028-017, 028-032, 028-033, 028-039A, 028-039B.

BRADY GLACIER—NICKEL

Alternate name: Nunatak
Map location No.: 161

Commodities: Ni, Cu, Co, PGM

LOCATION-OWNERSHIP

Quadrangle	Mount Fairweather.	Reference point	Claim.
Mining district	Yakutat.	Meridian	Copper River.
Elevation	1,052 m.	Tract	Sec. 26, T 38 S, R 51 E.
Topography	Very rugged.	Latitude	58°33'25" N.
Domain	National wilderness.	Longitude	136°55'0" W.

Operator ..... Newmont Exploration Limited.

GEOLOGY

Type of ore body	Stockwork, disseminated, massive.	Host formation	Crillon-Laperouse Stock
Origin	Magmatic differentiation.	Geologic age	Mesozoic.
Shape of ore body	Pipelike.	Deformation	Intrusion, faulting.
Ore controls	Igneous.	Age of deformation	Mesozoic.
Mineral names	Pentlandite, chalcopyrite, pyrrhotite, epidote, forsterite, enstatite, augite, serpentine, picotite, pyroxene, quartz, plagioclase, biotite, tremolite.	Rock types	Gabbro, peridotite, diorite, aplite, dunite, schist.

DEVELOPMENT

Current status	Explored deposit.	Distance to water supply	On-site.
Type of operation	Prospect.	Road requirement	Less than 50 km.
		Distance to power supply	More than 100 km.
Year of discovery	1958.		
Discovery method	Ore-mineral not in place.		
First production year	Not applicable.		
Last production year	Do.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	75,860,000 mt	0.54 pct Ni, 0.33 pct Cu.	1974	*323*, p. 16
Measured	90,719,000 mt	0.50 pct Ni, 0.30 pct Cu	1983	*296*, p. 43, No. 98.

REFERENCES

40, No. F-9; *55*, pp. 162; *56*; *72*, pp. C96-C101; *73*; *117*, pp. 329-330; *121*, pp. 15, 39, 43; *198*; *221*, p. 3; *236*, pp. 12-13; *244*, p. 10, No. 233; *262*; *266*; *296*, p. 43, No. 98; *382*; *411*; *431*; *471*; *502*; *519*, pp. 79-82; *565*; *575*; *638*, p. 65; *661*; *696*; *767*; *769*; *770*; *843*, pp. 177-178; *905*; *930*; *933*; *989*.

USGS quadrangle map	Mount Fairweather (C-3), 15'.
USBM MAS sequence No	0021110007.
MSHA Mid No	Not available.
USGS MRDS No	A002078.
Alaska Kardex No	111-041.

CAPE MOUNTAIN LODE—TIN

Alternate name: U.S. Tin Corp.
Map location No.: 30

Commodity: Sn

LOCATION-OWNERSHIP

Quadrangle ..... Teller.
Mining district ..... Port Clarence.
Elevation ..... 213 m.
Topography ..... Rugged.
Domain ..... Federal.

Owner ..... Grace Streauch Malone.

Reference point ..... Entrance to underground workings.
Meridian ..... Kateel River.
Tract ..... Sec. 12, T 2 N, R 45 W.
Latitude ..... 65°35'5" N.
Longitude ..... 167°57'15" W.

GEOLOGY

Type of ore body ..... Stockwork, replacement, shear zone.
Origin ..... Metasomatic, hydrothermal.
Shape of ore body ..... Irregular, tabular.
Ore controls ..... Igneous, contact zone.
Mineral names ..... Cassiterite, albite, apatite, beryl, biotite, calcite, actinolite, chert, chlorite, diopside, dolomite, epidote, fluorite, garnet, goethite, gold, graphite, hornblende, ilmenite, kaolin, lepidolite, limonite, magnetite, mica, microcline.

Host formation ..... Port Clarence Group.
Geologic age ..... Upper Mississippian.
Deformation ..... Intrusion, major folding, metamorphism.
Age of deformation ..... Cretaceous.
Rock types ..... Limestone, quartzite, olivine basalt, granite, marble.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Underground.

Year of discovery ..... 1902.
Discovery method ..... Ore-mineral in place.
First production year ..... 1903.
Last production year ..... 1941.

Distance to water supply ..... Less than 3 km.
Road requirement ..... Less than 10 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	650 mt	7.28 pct Sn	1946	*773*, pp. 2-3.
Inferred	1,350 mt			

REFERENCES

40, No. A-28; *55*; *78*, p. 28; *92*, pp. 28-29; *95*, p. 39; *98*, p. 50; *152*, p. 407; *252*, pp. 124-125; *254*, pp. 16, 24-25; *379*, p. 358; *393*; *408*, pp. 89-91; *409*, pp. 150-155; *430*; *484*, pp. 35-41; *487*, pp. 260-261; *631*; *773*; *827*, p. 68; *851*, p. 27; *868*, pp. 96-102; *922*, pp. 157-158, 160-162, 166-167; *937*, p. 1.

USGS quadrangle map ..... Teller (C-6), 15'.
USBM MAS sequence No ..... 0020430001.
MSHA Mid No ..... 5000293.
USGS MRDS No ..... A003627.
Alaska Kardex No ..... 043-021, 043-029, 043-033.

CAPE MOUNTAIN PLACER—TIN

Alternate name: Cape Creek
Map location No.: 30

Commodity: Sn

LOCATION-OWNERSHIP

Quadrangle ..... Teller.
Mining district ..... Port Clarence.
Elevation ..... 43 m.
Topography ..... Rolling.
Domain ..... BLM-administered.

Owner-operator ..... Lost River Mining Co.

Reference point ..... Mineralized zone.
Meridian ..... Kateel River.
Tract ..... Sec. 13, T 2 N, R 45 W.
Latitude ..... 65°34'25" N.
Longitude ..... 167°55'40" W.

GEOLOGY

Type of ore body ..... Placer.
Origin ..... Sedimentation.
Shape of ore body ..... Irregular.
Ore controls ..... Lithology, bedding.
Mineral names ..... Cassiterite, apatite, augite, biotite, calcite, albite, chlorite, ottrelite, diopside, dolomite, epidote, feldspar, forsterite, garnet, glaucophane, goethite, hematite, hornblende, hypersthene, limonite, magnetite, microcline, monazite, olivine.

Host formation ..... Alluvium.
Geologic age ..... Quaternary.
Deformation ..... Not available.
Age of deformation ..... Do.
Rock types ..... Gravel, silt.

DEVELOPMENT

Current status ..... Producer.
Type of operation ..... Placer.

Year of discovery ..... 1903.
Discovery method ..... Ore-mineral not in place.
First production year ..... 1924.
Last production year ..... 1985.

Distance to water supply ..... Less than 3 km.
Road requirement ..... Less than 10 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	285,550 m^3	1,320.00 g/m^3 Sn. Reserves from Cape, Goodwin, Granite, Boulder, Village Crs.	1943	*386*. p. 1.
Indicated	448,060 m^3	682.90 g/m^3 Sn. Reserves from Cape, 1st Chance, Boulder, Village Crs.	1945	*389*, p. 1.
Do	80,100 m^3	101.00 g/m^3 Sn. Reserves based on drilling Cape, 1st Chance, Boulder Crs.	1945	*389*, p. 1.
Do	2,027,100 m^3	1,061.00 g/m^3 Sn	1957	*894*, p. 1.

REFERENCES

40, No. A-29; *120*, p. 24; *121*, pp. 13, 31; *122*, p. 24; *215*; *252*; *254*; *295*, pp. 8, 25; *296*, p. 21; *386*; *387*; *389*; *392*; *393*; *409*; *430*; *466*, pp. 44-45; *484*; *631*; *633*; *779*; *781*; *868*, pp. 102-110; *894*.

USGS quadrangle map ..... Teller (C-6), 15'.
USBM MAS sequence No ..... 0020430002.
MSHA Mid No ..... 5001439.
USGS MRDS No ..... A003626.
Alaska Kardex No ..... 043-001, 043-003, 043-004, 043-008, 043-013, 043-014, 043-015, 043-016, 043-019, 043-024, 043-030, 043-034, 043-037, 043-039, 043-102, 043-128, 043-129.

CARL CREEK—COPPER

Alternate name: CCCU 1-101
Map location No.: 105

Commodities: Cu, Mo

LOCATION-OWNERSHIP

Quadrangle	Nabesna.	Reference point	Mineralized zone.
Mining district	Chisana.	Meridian	Copper River.
Elevation	1,615 m.	Tract	Sec. 9, T 3 N, R 21 E.
Topography	Very rugged.	Latitude	62°3'0" N.
Domain	National park.	Longitude	141°35'0" W.
Operator	Donald Dippel.		

GEOLOGY

Type of ore body	Stockwork, disseminated.	Host formation	Nabesna Pluton.
Origin	Hydrothermal.	Geologic age	Cretaceous.
Shape of ore body	Irregular, massive.	Deformation	Intrusion, metamorphism.
Ore controls	Igneous.	Age of deformation	Cretaceous.
Mineral names	Chalcopyrite, bornite, pyrite, molybdenite, magnetite, orthoclase, quartz.	Rock types	Quartz monzonite.

DEVELOPMENT

Current status	Explored prospect.	Distance to water supply	Less than 3 km.
Type of operation	Prospect.	Road requirement	Less than 50 km.
		Distance to power supply	More than 100 km.
Year of discovery	1973.		
Discovery method	Ore-mineral in place.		
First production year	Not applicable.		
Last production year	Do.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	14,510,000 mt	0.20 pct. Cu	1979	*269*, p. 83.

REFERENCES

11; *40*, No. E-54; *121*; *269*, p. 83, No. 144; *417*; *522*; *711*.

USGS quadrangle map	Nabesna (A-2), 15'.
USBM MAS sequence No	0020780038.
MSHA Mid No	Not available.
USGS MRDS No	Do.
Alaska Kardex No	078-101.

CLAIM POINT—CHROMIUM

Alternate name: Reef Deposit
Map location No.: 151

Commodity: Cr

LOCATION-OWNERSHIP

Quadrangle	Seldovia.	Reference point	Mineralized zone.
Mining district	Homer.	Meridian	Seward.
Elevation	61 m.	Tract	Sec. 21, T 11 S, R 15 W.
Topography	Rolling.	Latitude	59°12′25″ N.
Domain	Private.	Longitude	151°49′10″ W.
Owner	Whitney and Lass.		

GEOLOGY

Type of ore body	Stratiform.	Host formation	Unnamed ultramafic.
Origin	Magmatic differentiation.	Geologic age	Upper Jurassic.
Shape of ore body	Tabular, irregular.	Deformation	Faulting, metamorphism, intrusion.
Ore controls	Igneous.	Age of deformation	Upper Jurassic.
Mineral names	Chromite, olivine, serpentine, uvarovite, garnet, pyroxene.	Rock types	Dunite, pyroxenite, serpentinite.

DEVELOPMENT

Current status	Past producer.	Distance to water supply	Less than 10 km.
Type of operation	Surface.	Road requirement	Do.
		Distance to power supply	More than 100 km.
Year of discovery	1909.		
Discovery method	Ore-mineral in place.		
First production year	1917.		
Last production year	1918.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	267,000 mt	17.81 pct Cr_2O_3. Cr:Fe ratio 2.71:1.	1943	*791*, p. 1.
Do.	909,800 mt	8.40 pct Cr_2O_3	1984	*324*, p. 42.

REFERENCES

40, No. D-74; *47*, pp. 69-70; *55*, pp. 78-79; *60*; *79*, p. 22; *85*, p. 40; *121*, p. 40; *207*; *239*, pp. 11-13; *244*, p. 9, No. 213; *269*, p. 83, No. 166; *324*, pp. 41-43; *353*, pp. 1-2; *354*, pp. 100-111; *362*, pp. 168-169; *369*, pp. 129-143; *522*, p. 54; *524*, p. 17; *534*, pp. 23, 34; *540*, pp. 237-238; *553*; *791*; *792*; *904*, pp. 10-11.

USGS quadrangle map	Seldovia (A-5), 15′.
USBM MAS sequence No	0021040002.
MSHA Mid No	Not available.
USGS MRDS No	A002796.
Alaska Kardex No	104-008, 104-009.

COAL CREEK—GOLD

Alternate name: Ernest Wolff
Map location No.: 48

Commodities: Au, Ag

LOCATION-OWNERSHIP

Quadrangle	Charley River.	Reference point	Claim.
Mining district	Circle.	Meridian	Fairbanks.
Elevation	305 m.	Tract	Sec. 35, T 6 N, R 22 E.
Topography	Hilly.	Latitude	65°18′20″ N.
Domain	Federal.	Longitude	143°9′15″ W.
Owner	Au Placer, Inc.		

GEOLOGY

Type of ore body	Placer.	Host formation	Alluvium.
Origin	Sedimentation.	Geologic age	Quaternary.
Shape of ore body	Irregular, tabular.	Deformation	Not available.
Ore controls	Bedding.	Age of deformation	Do.
Mineral names	Gold, quartz, scheelite, magnetite, ilmenite.	Rock types	Gravel.

DEVELOPMENT

Current status	Past producer.	Distance to water supply	On-site.
Type of operation	Placer.	Road requirement	Less than 10 km.
		Distance to power supply	More than 100 km.
Year of discovery	1901.		
Discovery method	Ore-mineral in place.		
First production year	1902.		
Last production year	1976.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	3,058,000 m^3	8.95 g/m^3 Au	1984	*940*.

REFERENCES

66; *77*, p. 61; *78*, p. 63; *83*, pp. 202-203; *94*, p. 54; *146*, p. 19; *161*, p. 360; *181*; *215*; *216*, p. 66; *269*, p. 81, No. 83; *302*; *307*, p. 213; *308*, p. 172; *555*, pp. 165-166; *557*, pp. 251-254; *570*, pp. 246-251, 254; *648*, p. 109; *664*, p. 76; *665*, p. 23; *666*, pp. 201, 208-209; *832*, p. 39; *833*, pp. 42-43; *834*, pp. 49, 71-72; *835*, pp. 49, 76; *836*, pp. 47, 74; *837*, pp. 43, 70; *838*, pp. 40, 67; *921*, p. 48; *940*.

USGS quadrangle map	Charley River (B-5), 15′.
USBM MAS sequence No	0020510008.
MSHA Mid No	Not available.
USGS MRDS No	A000568.
Alaska Kardex No	051-003.

COLBERT—TUNGSTEN

Alternate name: Cleary Hill
Map location No.: 57

Commodities: W, Sn, Mo, Sb

LOCATION-OWNERSHIP

Quadrangle ..... Fairbanks.
Mining district ..... Fairbanks.
Elevation ..... 694 m.
Topography ..... Hilly.
Domain ..... State.

Reference point ..... Claim.
Meridian ..... Fairbanks.
Tract ..... Sec. 21, T 2 N, R 2 E.
Latitude ..... 64°58'52" N.
Longitude ..... 147°21'44" W.

Owner-operator ..... Alaska Metals Mining Co.

GEOLOGY

Type of ore body ..... Replacement.
Origin ..... Residual concentration, metasomatic.
Shape of ore body ..... Irregular.
Ore controls ..... Contact zone, igneous.
Mineral names ..... Scheelite, gold, molybdenite, stibnite, pyrolusite, cassiterite, quartz, calcite, diopside, hornblende, garnet, apatite, pyrite, pyrrhotite.

Host formation ..... Birch Creek Schist.
Geologic age ..... Paleozoic.
Deformation ..... Metamorphism, faulting, intrusion.
Age of deformation ..... Mesozoic.
Rock types ..... Schist, quartzite, limestone.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Surface-underground.

Year of discovery ..... 1915.
Discovery method ..... Ore-mineral in place.
First production year ..... 1918.
Last production year ..... 1944.

Distance to water supply ..... On-site.
Road requirement ..... None.
Distance to power supply ..... Less than 50 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	8,100 mt	3.60 pct WO_3	1945	*793*, p. 1.
Inferred	11,200 mt			
Indicated	1,360 mt	1.60 pct WO_3	1945	*794*, p. 1.

REFERENCES

47; *55*; *88*; *89*; *90*; *121*, p. 41; *125*; *163*; *453*; *454*; *538*; *539*; *793*; *816*; *893*.

USGS quadrangle map ..... Fairbanks (D-1), 15'.
USBM MAS sequence No ..... 0020580032.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A001075.
Alaska Kardex No ..... 058-002, 058-003, 058-004, 058-159, 058-239, 058-243, 058-246.

COPPER BULLION—COPPER

Alternate name: Rua Cove
Map location No.: 137

Commodities: Cu, Zn, Fe, S

LOCATION-OWNERSHIP

Quadrangle	Seward.	Reference point	Entrance to underground workings.
Mining district	Prince William Sound.	Meridian	Seward.
Elevation	152 m.	Tract	Sec. 13, T 3 N, R 10 E.
Topography	Very rugged.	Latitude	60°21′5″ N.
Domain	Private.	Longitude	147°38′50″ W.
Operator	Solar Development Co.		

GEOLOGY

Type of ore body	Shear zone, replacement, disseminated.	Host formation	Orca Group.
Origin	Hydrothermal.	Geologic age	Cretaceous.
Shape of ore body	Tabular, lenticular, irregular.	Deformation	Major faulting.
Ore controls	Faulting, fracturing.	Age of deformation	Post-Jurassic.
Mineral names	Chalcopyrite, pyrrhotite, sphalerite, quartz, chlorite.	Rock types	Greenstone, schist, quartz diorite.

DEVELOPMENT

Current status	Explored deposit.	Distance to water supply	On-site.
Type of operation	Underground.	Road requirement	Less than 10 km.
		Distance to power supply	More than 100 km.
Year of discovery	1906.		
Discovery method	Ore-mineral in place.		
First production year	Not applicable.		
Last production year	Do.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	22,700 mt	1.25 pct Cu	1946	*867*, pp. 91-92.
Indicated	1,022,000 mt			
Inferred	181,000 mt			
Not reported in reference	997,900 mt	1.25 pct Cu	1984	*295*, p. 45.

REFERENCES

40, No. E-86; *55*; *74*, pp. 28, 38; *80*, p. 40; *81*, p. 24; *85*, pp. 22-23; *105*, pp. 28-29, *121*, p. 11, *258*; *269*, p. 83, No. 161; *295*, p. 45, No. 81; *359*, p. 165; *360*, p. 92; *363*, p. 69; *455*, pp. 213-214; *464*, p. 145; *522*; *533*, p. 31; *593*, pp. 300-301; *704*, p. 26; *775*; *823*, p. 21; *826*, pp. 54-55; *827*, pp. 22, 60; *828*, pp. 21-22; *867*.

USGS quadrangle map	Seward (B-2), 15′.
USBM MAS sequence No	0020950037.
MSHA Mid No	Not available.
USGS MRDS No	A002859.
Alaska Kardex No	095-098, 095-099

DENALI—COPPER

Alternate name: Copper King
Map location No.: 76

Commodities: Cu, Zn, Fe, S

LOCATION-OWNERSHIP

Quadrangle	Healy.
Mining district	Valdez Creek.
Elevation	1,411 m.
Topography	Very rugged.
Domain	BLM-administered.
Owner-operator	Cities Service Co.
Reference point	Entrance to underground workings.
Meridian	Fairbanks.
Tract	Sec. 27, T 20 S, R 3 E.
Latitude	63°8'50" N.
Longitude	147°8'20" W.

GEOLOGY

Type of ore body	Stratiform, stratabound.
Origin	Sedimentation.
Shape of ore body	Irregular.
Ore controls	Bedding.
Mineral names	Chalcopyrite, pyrite, bornite, sphalerite, chalcocite, silver.
Host formation	Unnamed sedimentary.
Geologic age	Jurassic.
Deformation	Major faulting, metamorphism, intrusion.
Age of deformation	Paleocene.
Rock types	Limestone, argillite, shale.

DEVELOPMENT

Current status	Explored deposit.
Type of operation	Underground.
Year of discovery	1963.
Discovery method	Geochemical anomaly.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	Less than 3 km.
Road requirement	Less than 10 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	4,536,000 mt	2.00 pct Cu	1979	*269*, p. 83.

REFERENCES

40, No. E-24; *55*; *121*, p. 11, *269*, p. 83; *295*, p. 44, No. 67; *469*; *522*; *596*; *766*; *802*; *853*; *854*.

USGS quadrangle map	Healy (A-1), 15'.
USBM MAS sequence No	0020670008.
MSHA Mid No	5000056.
USGS MRDS No	Not available.
Alaska Kardex No	067-065, 067-142, 067-143, 067-144, 067-155.

DUNDAS BAY—IRON

Alternate name: Pulver & Winn
Map location No.: 164

Commodity: Fe

LOCATION-OWNERSHIP

Quadrangle ..... Mount Fairweather.
Mining district ..... Juneau.
Elevation ..... 518 m.
Topography ..... Very rugged.
Domain ..... National wilderness.

Operator ..... R.G. Dalton.

Reference point ..... Claim.
Meridian ..... Copper River.
Tract ..... Sec. 24, T 40 S, R 55 E.
Latitude ..... 58°23'5" N.
Longitude ..... 136°14'45" W.

GEOLOGY

Type of ore body ..... Replacement.
Origin ..... Metasomatic.
Shape of ore body ..... Lenticular, massive.
Ore controls ..... Contact zone.
Mineral names ..... Magnetite, chalcopyrite, hematite, pyrite, malachite, quartz.

Host formation ..... Unnamed sedimentary.
Geologic age ..... Devonian.
Deformation ..... Metamorphism, intrusion.
Age of deformation ..... Tertiary.
Rock types ..... Limestone, skarn, granodiorite.

DEVELOPMENT

Current status ..... Explored prospect.
Type of operation ..... Prospect.

Year of discovery ..... 1903.
Discovery method ..... Ore-mineral in place.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... Less than 3 km.
Road requirement ..... Less than 10 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	453,600 mt	65.00 pct FeO	1917	*880*, pp. 2, 5.

REFERENCES

72, p. C369, plates 1A, 1B, 2; *198*; *519*, pp. 16, 36, 70; *880*.

USGS quadrangle map ..... Mount Fairweather (B-1), 15'.
USBM MAS sequence No ..... 0021110067.
MSHA Mid No ..... Not available.
USGS MRDS No ..... Do.
Alaska Kardex No ..... Do.

FISH CREEK—SILVER

Alternate name: Roanan Vein
Map location No.: 210

Commodities: Ag, Pb, Cu, Zn, Au

LOCATION-OWNERSHIP

Quadrangle ..... Ketchikan.
Mining district ..... Hyder.
Elevation ..... 606 m.
Topography ..... Rugged.
Domain ..... National forest.

Reference point ..... Mineralized zone.
Meridian ..... Copper River.
Tract ..... Sec. 11, T 68 S, R 99 E.
Latitude ..... 55°59'0" N.
Longitude ..... 130°3'0" W.

Owner ..... Mineral Basin Mining Corp.

GEOLOGY

Type of ore body ..... Fissure vein, disseminated.
Origin ..... Hydrothermal.
Shape of ore body ..... Tabular, irregular, lenticular.
Ore controls ..... Fracturing, contact zone.
Mineral names ..... Galena, chalcopyrite, tetrahedrite sphalerite, pyrite, scheelite, barite, freibergite, quartz.

Host formation ..... Texas Creek Granodiorite.
Geologic age ..... Jurassic.
Deformation ..... Intrusion.
Age of deformation ..... Jurassic.
Rock types ..... Granodiorite.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Underground.

Year of discovery ..... 1906.
Discovery method ..... Ore-mineral in place.
First production year ..... 1916.
Last production year ..... 1940.

Distance to water supply ..... Less than 10 km.
Road requirement ..... Do.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	2,300 mt	630.40 g/mt Ag, 5.71 pct Pb, 1.00 pct Cu, 1.49 pct Zn, 2.06 g/mt Au.	1945	*909*, p. 1.
Inferred	8,000 mt			

REFERENCES

47, pp. 42, 68-69; *55*, p. 147; *81*, p. 21; *113*, pp. 43, 63-67; *115*, pp. 74, 76-77; *116*, pp. 41-42, 54-55; *117*, pp. 317, 324, 327, 330, 358; *121*; *126*, p. 138; *158*, p. 98; *191*; *320*; *600*, p. 31; *826*, p. 16; *827*, p. 17; *843*, p. 171; *893*, pp. 4-5, 36, 38, 45-49; *909*; *968*, pp. 138-139; *996*, p. 66.

USGS quadrangle map ..... Ketchikan (D-1), 15'.
USBM MAS sequence No ..... 0021200064.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A001606.
Alaska Kardex No ..... 120-008, 120-063, 120-080, 120-087.

FUNTER BAY—NICKEL

Alternate name: Mertie Adit
Map location No.: 169

Commodities: Ni, Cu, Co, Au, Pb, Zn, Ag

LOCATION-OWNERSHIP

Quadrangle	Juneau.
Mining district	Admiralty.
Elevation	518 m.
Topography	Very rugged.
Domain	National forest.
Owner-operator	Admiralty-Alaska Gold Mining Co.
Reference point	Mineralized zone.
Meridian	Copper River.
Tract	Sec. 18, T 42 S, R 65 E.
Latitude	58°13′55″ N.
Longitude	134°51′21″ W.

GEOLOGY

Type of ore body	Disseminated.
Origin	Magmatic differentiation.
Shape of ore body	Pipelike.
Ore controls	Igneous.
Mineral names	Pentlandite, pyrrohotite, chalcopyrite, violarite, olivine, labradorite, biotite, serpentine, chlorite, magnetite, augite, pyrite, hypersthene, talc, anthophyllite, calcite.
Host formation	Unnamed igneous.
Geologic age	Pre-Permian.
Deformation	Intrusion.
Age of deformation	Pre-Permian.
Rock types	Gabbro, greenstone.

DEVELOPMENT

Current status	Explored deposit.
Type of operation	Underground.
Year of discovery	1886.
Discovery method	Ore-mineral in place.
First production year	1895.
Last production year	1939.
Distance to water supply	Less than 10 km.
Road requirement	Do.
Distance to power supply	Less than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	508,030 mt	0.34 pct Ni, 0.35 pct Cu, 0.15 pct Co	1984	*295*, p. 46.

REFERENCES

1; *35*; *40*, No. F-24; *47*, pp. 70-71; *49*; *53*, pp. 62-63, 77-78; *55*, pp. 137, 140; *56*, p. 57, No. 137; *58*, p. 27; *73*, p. 440; *74*, p. 12; *80*, pp. 36-37; *81*, p. 22; *115*, pp. 72, 95, 109; *116*, pp. 41-46; *117*, p. 348; *121*, p. 39; *158*, p. 76; *189*; *233*, pp. 6-10; *244*, p. 10, No. 239; *246*, p. 130; *262*, pp. 13, 37-38; *279*; *282*, pp. 86-92; *295*, p. 46, No. 99; *343*; *368*; *380*; *399*, p. 33; *419*, pp. 1-15; *492*; *494*, p. 43; *534*, p. 30; *547*; *561*, pp. 113-116; *638*, p. 65; *670*; *671*, pp. 4, 15, 19-20; *693*; *694*; *823*, p. 7; *826*, p. 14; *827*, p. 16; *828*, p. 16; *829*, pp. 15-16; *830*, p. 15; *831*, p. 17; *832*, pp. 16, 82-83; *833*, p. 17; *834*, p. 17; *835*, p. 19; *836*, pp. 19, 105; *837*, p. 18; *838*, p. 17; *843*, p. 174; *852*, p. 16; *863*, p. 149; *904*, p. 7; *920*; *962*, pp. 51-52; *987*, p. 113; *996*, p. 55.

USGS quadrangle map	Juneau (A-3), 15′.
USBM MAS sequence No	0021120072.
MSHA Mid No	Not available.
USGS MRDS No	A001484.
Alaska Kardex No	112-024, 112-086, 112-087, 112-100.

GOLDEN ZONE—GOLD

Alternate name: Mayflower 1-2
Map location No.: 72

Commodities: Au, Ag, Cu, Pb, Zn

LOCATION-OWNERSHIP

Quadrangle	Healy.
Mining district	Valdez Creek.
Elevation	1,000 m.
Topography	Rugged.
Domain	BLM-administered.
Owner	Hawley Resource Group.
Reference point	Entrance to underground workings.
Meridian	Fairbanks.
Tract	Sec. 34, T 19 S, R 11 W.
Latitude	63°13′8″ N.
Longitude	149°38′25″ W.

GEOLOGY

Type of ore body	Breccia fill.
Origin	Hydrothermal.
Shape of ore body	Pipelike.
Ore controls	Igneous fracturing.
Mineral names	Gold, pyrite, chalcopyrite, sphalerite, galena, molybdenite, cassiterite, arsenopyrite, silver, tourmaline, pyrrhotite, copper, cerrusite, sericite, smithsonite, quartz, limonite, chlorite, malachite, stibnite, bismuth.
Host formation	Unnamed porphyry stock.
Geologic age	Tertiary.
Deformation	Faulting, major folding, intrusion.
Age of deformation	Tertiary.
Rock types	Volcanic breccia, quartz diorite.

DEVELOPMENT

Current status	Past producer.
Type of operation	Underground.
Year of discovery	1912.
Discovery method	Ore-mineral in place.
First production year	1941.
Last production year	1942.
Distance to water supply	On-site.
Road requirement	None.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	80,000 mt	3.43 g/mt Au. This reserve is the portion between surface and 200 level.	1979	*269*, p. 83.
Do.	9,072,000 mt	3.43 g/mt Au	1984	*295*, p. 44.

REFERENCES

40, No. E-14; *55*, pp. 23-26; *121*, pp. 13, 16; *129*, pp. 298-300; *130*, p. 135; *140*, pp. 221, 226-227; *166*; *269*, p. 83, No. 125; *295*, pp. 12, 44, No. 64; *383*, pp. 4-9; *384*; *522*; *634*; *765*; *833*, p. 29; *834*, p. 34; *835*, p. 30; *837*, p. 27; *838*, p. 27; *955*, p. 74; *957*, pp. 1, 6-8; *971*, p. 7.

USGS quadrangle map	Healy (A-6), 15′.
USBM MAS sequence No	0020670154.
MSHA Mid No	5001453.
USGS MRDS No	A001294.
Alaska Kardex No	067-006, 067-014.

GRANT—GOLD

Alternate name: Irishman
Map location No.: 56

Commodity: Au

LOCATION-OWNERSHIP

Quadrangle	Fairbanks.
Mining district	Fairbanks.
Elevation	236 m.
Topography	Hilly.
Domain	State.
Owner	Silverado Mines.
Reference point	Entrance to underground workings.
Meridian	Fairbanks.
Tract	Sec. 28, T 1 N, R 2 W.
Latitude	64°55'50" N.
Longitude	147°57'25" W.

GEOLOGY

Type of ore body	Fissure vein.
Origin	Hydrothermal.
Shape of ore body	Lenticular, tabular, irregular.
Ore controls	Fracturing.
Mineral names	Gold, stibnite, galena, pyrite, tetrahedrite, quartz.
Host formation	Birch Creek Schist.
Geologic age	Paleozoic.
Deformation	Metamorphism, faulting, intrusion.
Age of deformation	Mesozoic.
Rock types	Schist, quartzite.

DEVELOPMENT

Current status	Past producer.
Type of operation	Underground.
Year of discovery	1912.
Discovery method	Ore-mineral in place.
First production year	1912.
Last production year	1985.
Distance to water supply	On-site.
Road requirement	None.
Distance to power supply	On-site.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	67,100 mt	24.00 g/mt Au	1982	*278.*
Not reported in reference	1,167,000 mt	20.90 g/mt Au	1985	*966.*

REFERENCES

17; *120*, pp. 12, 25; *121*, pp. 16, 21, 22, 31; *163*, p. 17; *173*; *278*; *295*, pp. 10, 16; *296*, p. 11; *410*, p. 150; *475*, p. 19; *828*, p. 19; *835*, p. 25; *966*.

USGS quadrangle map	Fairbanks, (D-2) NW, 7.5'.
USBM MAS sequence No	0020580021.
MSHA Mid No	5001314.
USGS MRDS No	A001108.
Alaska Kardex No	058-035, 058-283.

GREENS CREEK—ZINC

Alternate name: Big Sore
Map location No.: 170

Commodities: Zn, Pb, Cu, Ag, Au

LOCATION-OWNERSHIP

Quadrangle	Juneau.	Reference point	Claim.
Mining district	Admiralty.	Meridian	Copper River.
Elevation	411 m.	Tract	Sec. 9, T 44 S, R 66 E.
Topography	Very Rugged.	Latitude	58°4'45" N.
Domain	National monument.	Longitude	134°37'35" W.
Owner-operator	Amselco Minerals Co.		

GEOLOGY

Type of ore body	Stratabound, stratiform.	Host formation	Unnamed metavolcanoseds.
Origin	Sedimentation.	Geologic age	Paleozoic.
Shape of ore body	Tabular.	Deformation	Minor folding, metamorphism.
Ore controls	Lithology, folding.	Age of deformation	Paleozoic.
Mineral names	Sphalerite, galena, chalcopyrite, pyrrhotite, calcite, tetrahedrite.	Rock types	Phyllite, chert, tuff, volcanic breccia.

DEVELOPMENT

Current status	Explored deposit.	Distance to water supply	Less than 10 km.
Type of operation	Underground.	Road requirement	Less than 50 km.
		Distance to power supply	Less than 100 km.
Year of discovery	1974.		
Discovery method	Ore-mineral in place.		
First production year	Not applicable.		
Last production year	Do.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	3,600,000 mt	7.50 pct Zn, 2.50 pct Pb, 0.40 pct Cu, 445.60 g/mt Ag, 3.40 g/mt Au.	1983	*311*.
Measured	3,175,000 mt	6.40 pct Zn, 2.10 pct Pb, 1.50 pct Cu, 353.00 g/mt Ag, 3.10 g/mt Au. Reserves estimated at 3,175,000-3,629,000 mt.	1984	*295*, pp. 18, 46.

REFERENCES

13; *19*; *40*, No. F-28; *56*; *120*, p. 18; *121*, pp. 12, 25; *269*, p. 84, No. 221; *295*, pp. 14, 18, 46; *296*, pp. 1, 14; *311*; *864*.

USGS quadrangle map	Juneau (A-2), 15'.
USBM MAS sequence No	0021120035.
MSHA Mid No	5001267.
USGS MRDS No	Not available.
Alaska Kardex No	112-158, 112-162.

GROUNDHOG BASIN—ZINC

Alternate name: General Lee
Map location No.: 206

Commodities: Zn, Pb, Ag, Cu, Mo

LOCATION-OWNERSHIP

Quadrangle	Petersburg.
Mining district	Petersburg.
Elevation	534 m.
Topography	Very rugged.
Domain	National forest.
Owner	William D. Grant.
Reference point	Claim.
Meridian	Copper River.
Tract	Sec. 7, T 62 S, R 86 E.
Latitude	56°30'52" N.
Longitude	132°3'45" W.

GEOLOGY

Type of ore body	Replacement, disseminated.
Origin	Hydrothermal.
Shape of ore body	Tabular.
Ore controls	Bedding, lithology.
Mineral names	Sphalerite, galena, chalcopyrite, tetrahedrite, tennantite, pyrrhotite, molybdenite, magnetite, pyrite, quartz, hornblende, pyroxene, epidote, garnet, biotite, chlorite, actinolite.
Host formation	Wrangell-Revillagigedo.
Geologic age	Paleozoic.
Deformation	Intrusion, metamorphism.
Age of deformation	Tertiary.
Rock types	Schist, gneiss, phyllite.

DEVELOPMENT

Current status	Explored prospect.
Type of operation	Prospect.
Year of discovery	1904.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	Less than 10 km.
Road requirement	Less than 50 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	499,000 mt	8.00 pct Zn, 1.50 pct Pb	1953	*904*, p. 6.
Do	454,000 mt	2.50 pct Zn, 1.00 pct Pb		

REFERENCES

40, No. F-48; *47*, p. 41; *55*, pp. 191-192; *56*; *114*, pp. 57-63; *117*, pp. 318, 328, 361; *121*, pp. 12, 14; *157*, pp. 74-75; *158*, pp. 78, 98-99; *202*; *295*, p. 46 , No. 112; *352*, pp. 15, 17-29, 33, 37, 40; *468*, p. 12; *517*, p. 7; *638*, p. 64; *828*, p. 81; *843*, p. 172; *904*, p. 6; *906*, pp. 37-38; *991*, p. 72; *996*, p. 61; *998*, p. 189; *999*, p. 53.

USGS quadrangle map	Petersburg (C-1), 15'.
USBM MAS sequence No	0021170018.
MSHA Mid No	Not available.
USGS MRDS No	A002628.
Alaska Kardex No	117-001, 117-005, 117-056.

HORSFELD—COPPER

Alternate name: Horsfall
Map location No.: 106

Commodity: Cu

LOCATION-OWNERSHIP

Quadrangle ..... Nabesna.
Mining district ..... Chisana.
Elevation ..... 1,676 m.
Topography ..... Very rugged.
Domain ..... Federal.

Reference point ..... Mineralized zone.
Meridian ..... Copper River.
Tract ..... Sec. 9, T 3 N, R 23 E.
Latitude ..... 62°3'2" N.
Longitude ..... 141°13'5" W.

Owner ..... Oil Development Co. of Texas.

GEOLOGY

Type of ore body ..... Stockwork, breccia fill, disseminated.
Origin ..... Hydrothermal.
Shape of ore body ..... Irregular, massive.
Ore controls ..... Igneous.
Mineral names ..... Chalcopyrite, bornite, pyrite, molybdenite, magnetite, orthoclase, quartz.

Host formation ..... Nabesna Pluton.
Geologic age ..... Cretaceous.
Deformation ..... Intrusion, metamorphism.
Age of deformation ..... Cretaceous.
Rock types ..... Quartz monzonite.

DEVELOPMENT

Current status ..... Explored prospect.
Type of operation ..... Prospect.

Year of discovery ..... Not available.
Discovery method ..... Do.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... Less than 3 km.
Road requirement ..... Less than 50 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	54,420,000 mt	0.20 pct Cu	1979	*269*, p. 83.

REFERENCES

40, No. E-55; *269*, p. 83, No. 144; *417*; *522*, *715*.

USGS quadrangle map ..... Nabesna (A-1), 15'.
USBM MAS sequence No ..... 0020780043.
MSHA Mid No ..... Not available.
USGS MRDS No ..... Do.
Alaska Kardex No ..... 078-106.

JUALIN—GOLD

Alternate name: Jualin Mines Co.
Map location No.: 167

Commodities: Au, Ag, Pb, Zn, Cu

LOCATION-OWNERSHIP

Quadrangle	Juneau.
Mining district	Juneau.
Elevation	210 m.
Topography	Very rugged.
Domain	National forest.
Owner	Hyak Mining Co.-Neil MacKinnon.
Reference point	Entrance to underground workings.
Meridian	Copper River.
Tract	Sec. 15, T 35 S, R 62 E.
Latitude	58°50'28" N.
Longitude	135°2'42" W.

GEOLOGY

Type of ore body	Fissure vein, stockwork, shear zone.
Origin	Hydrothermal.
Shape of ore body	Tabular, pipelike, lenticular.
Ore controls	Faulting, contact zone.
Mineral names	Gold, quartz, pyrite, chalcopyrite, galena, sphalerite, calcite, arsenopyrite, malachite, azurite.
Host formation	Jualin Diorite.
Geologic age	Lower Cretaceous.
Deformation	Intrusion, faulting.
Age of deformation	Lower Cretaceous.
Rock types	Diorite, basalt, slate, graywacke.

DEVELOPMENT

Current status	Past producer.
Type of operation	Underground.
Year of discovery	1895.
Discovery method	Ore-mineral not in place.
First production year	1896.
Last production year	1919.
Distance to water supply	On-site.
Road requirement	Less than 50 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	90,000 mt	8.70 g/mt Au	1983	*120*, p. 12.
Do	9,979,000 mt	3.40 g/mt Au		

REFERENCES

11; *33*; *40*, No F-16; *56*; *76*, p. 59; *77*, p. 41; *80*, p. 36; *86*, p. 67; *97*, p. 26; *98*, p. 32; *105*, pp. 24-25; *117*, pp. 317-318, 345-346; *120*, p. 12; *121*, p. 17; *158*, p. 77; *189*; *282*, pp. 77-83, plate 6; *285*, p. 101; *295*, p. 13; *398*; *399*; *483*, pp. 38-48; *485*, pp. 136-138; *533*, p. 29; *534*, p. 30; *561*, pp. 107-108; *638*, p. 60; *675*, pp. 18-19; *732*; *745*; *778*; *826*, p. 14; *827*, p. 16; *832*, p. 16; *851*, pp. 35, 36, 52; *852*, pp. 23-24; *874*; *922*, p. 38; *991*, pp. 57-58; *992*, p. 90; *993*, p. 71; *996*, p. 54; *999*, pp. 32-34.

USGS quadrangle map	Juneau (D-4), 15'.
USBM MAS sequence No	0021120052.
MSHA Mid No	Not available
USGS MRDS No	A001504.
Alaska Kardex No	112-007, 112-008, 112-009, 112-010, 112-012, 112-013, 112-014, 112-016, 112-017, 112-018, 112-019, 112-097, 112-122, 112-123.

JUMBO BASIN—IRON

Alternate name: Sulzer
Map location No.: 220

Commodities: Fe, Cu, Au, Ag, Mo, Zn, Cr

LOCATION-OWNERSHIP

Quadrangle ..... Craig.
Mining district ..... Ketchikan.
Elevation ..... 610 m.
Topography ..... Very rugged.
Domain ..... National forest.

Owner ..... Eskil Anderson.

Reference point ..... Mineralized zone.
Meridian ..... Copper River.
Tract ..... Sec. 34, T 76 S, R 84 E.
Latitude ..... 55°14'30" N.
Longitude ..... 132°37'54" W.

GEOLOGY

Type of ore body ..... Replacement.
Origin ..... Metasomatic.
Shape of ore body ..... Tabular, irregular.
Ore controls ..... Igneous, contact zone.
Mineral names ..... Magnetite, chalcopyrite, molybdenite, pyrite, pyrrhotite, hematite, pyroxene, quartz, scapolite, amphibole, epidote, calcite, garnet, diopside, hornblende, copper, limonite, malachite, azurite, chrysocolla, sericite, albite, talc.

Host formation ..... Unnamed igneous.
Geologic age ..... Lower Cretaceous.
Deformation ..... Intrusion, metamorphism, major folding, faulting.
Age of deformation ..... Lower Cretaceous.
Rock types ..... Skarn, granodiorite, limestone, marble, quartzite, schist.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Surface-underground.

Year of discovery ..... 1897.
Discovery method ..... Ore-mineral in place.
First production year ..... 1907.
Last production year ..... 1923.

Distance to water supply ..... On-site.
Road requirement ..... Less than 10 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	96,760 mt	43.40 pct Fe, 0.67 pct Cu, 0.38 g/mt Au, 28.50 g/mt Ag.	1945	*421*, p. 1.
Indicated	150,760 mt			
Inferred	69,660 mt			
Not reported in reference	589,680 mt	45.20 pct Fe, 0.75 pct Cu, 0.34 g/mt Au, 2.70 g/mt Ag.	1984	*295*, p. 46.

REFERENCES

40, No. F-63; 55, p. 171; *56*, p. 27, No. 111; *74*, p. 36; *76*, p. 60; *77*, p. 41; *85*, p 17; *95*, p. 38; *97*, p. 26; *98*, p. 33; *105*, p. 23; *106*, p. 69; *117*, pp. 316-317, 369; *118*, pp. 19-20; *121*, p. 36; *147*, pp. 80, 102; *156*, p. 88; *157*, p. 68; *158*, pp. 83, 90; *184*; *231*, pp. 103-105; *256*, pp. 34-35; *295*, p. 46, No. 118; *357*; *421*; *470*, pp. 1, 3-4, 13-14, 22-23, 27-28, 31, 36-40; *485*, p. 142; *486*, pp. 99, 101; *533*, p. 28; *534*, p. 28; *637*; *638*, p. 54; *735*, p. 10; *748*, p. 10; *758*, p. 13; *820*, p. 83; *843*, pp. 165-166; *851*, pp. 29, 52; *852*, p. 26; *990*, pp. 33, 36, 42, 46, 49, 51, 53, 58-61, 106-107; *992*, p. 94; *993*, pp. 81-82; *998*, pp. 99-102; *1000*.

USGS quadrangle map ..... Craig (A-2), 15'.
USBM MAS sequence No 0021190002.,
MSHA Mid No ..... 5000048.
USGS MRDS No ..... A000812.
Alaska Kardex No ..... 119-015, 119-086, 119-186, 119-188.

KASNA CREEK—COPPER

Alternate name: Platsburg
Map location No.: 129

Commodities: Cu, Fe

LOCATION-OWNERSHIP

Quadrangle ..... Lake Clark.
Mining district ..... Bristol Bay.
Elevation ..... 762 m.
Topography ..... Very rugged.
Domain ..... National wilderness.

Owner ..... St. Eugene Mining Corp. Ltd.

Reference point ..... Mineralized zone.
Meridian ..... Seward.
Tract ..... Sec. 24, T 1 N, R 28 W.
Latitude ..... 60°9'25" N.
Longitude ..... 154°3'15" W.

GEOLOGY

Type of ore body ..... Replacement, disseminated.
Origin ..... Metasomatic.
Shape of ore body ..... Lenticular, irregular.
Ore controls ..... Lithology, bedding.
Mineral names ..... Chalcopyrite, hematite, magnetite, talc, quartz, pyrite, calcite, sphalerite, amphibole, chlorite.

Host formation ..... Unnamed limestone.
Geologic age ..... Devonian.
Deformation ..... Major folding, faulting, intrusion.
Age of deformation ..... Lower Jurassic.
Rock types ..... Limestone, dolomite, basalt, andesite, felsic igneous.

DEVELOPMENT

Current status ..... Explored prospect.
Type of operation ..... Prospect.

Year of discovery ..... 1906.
Discovery method ..... Ore-mineral in place.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... On-site.
Road requirement ..... Less than 100 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference ...	9,072,000 mt	1.00 pct Cu	1984	*295*, p. 45.

REFERENCES

40, No. D-52; *47*, p. 33; *55*, pp. 14-16; *141*, pp. 92-93; *193*; *269*, p. 83, No. 173; *291*, pp. 2, 4-10, 14; *295*, p. 45, No. 92; *541*, pp. 121-122; *542*, pp. 198-199; *625*, pp. 3-4; *677*, pp. 13-16; *819*, pp. 150-151; *943*; *955*, p. 77.

USGS quadrangle map ..... Lake Clark (A-3), 15'.
USBM MAS sequence No ..... 0020930001.
MSHA Mid No ..... 5000198.
USGS MRDS No ..... A001713.
Alaska Kardex No ..... 093-007, 093-013.

KLUKWAN—IRON

Alternate name: Alaska Iron Co.
Map location No.: 157

Commodities: Fe, Ti, PGM

LOCATION-OWNERSHIP

Quadrangle	Skagway.	Reference point	Mineralized zone.
Mining district	Juneau.	Meridian	Copper River.
Elevation	250 m.	Tract	Sec. 28, T 28 S, R 56 E.
Topography	Hilly.	Latitude	59°24′56″ N.
Domain	Mixed.	Longitude	135°53′42″ W.
Owner	Falconbridge.		

GEOLOGY

Type of ore body	Placer.	Host formation	Alluvium.
Origin	Sedimentation.	Geologic age	Quaternary.
Shape of ore body	Lenticular, irregular.	Deformation	Not available.
Ore controls	Lithology.	Age of deformation	Do.
Mineral names	Magnetite, pyroxene, amphibole, ilmenite, chlorite, epidote, calcite, feldspar, quartz, apatite.	Rock types	Gravel, pyroxenite, diorite.

DEVELOPMENT

Current status	Explored deposit.	Distance to water supply	On-site.
Type of operation	Prospect.	Road requirement	Less than 10 km.
		Distance to power supply	More than 100 km.
Year of discovery	1899.		
Discovery method	Ore-mineral in place.		
First production year	Not applicable.		
Last production year	Do.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	454,000,000 mt	10.00 pct Fe. Iron content expressed as magnetite	1955	*718*, p. 36.
Do.	907,800,000 mt	10.80 pct. Fe. Alluvial fan portion of deposit; assay is soluble Fe.	1972	*876*, p. 5.
Do	3,210,100,000 mt	16.80 pct Fe. Lode portion of deposit; assay is soluble Fe.	1972	*876*, p. 5.

REFERENCES

40, No. F-3; *55*, p. 163; *56*, p. 117, Nos. 67-68; *147*, pp. 80-81, 102; *212*; *215*, p. 103; *222*, p. 4; *223*, pp. 4-5; *236*, pp. 92-93; *244*, p. 10, No. 236; *269*, p. 84, No. 215; *295*, p. 45, No. 96; *312*; *322*, p. 5; *468*, p. 11; *523*, pp. 18, 24-25; *718*; *876*; *933*, p. 159; *961*.

USGS quadrangle map	Skagway (B-3), 15′.
USBM MAS sequence No	0021090001.
MSHA Mid No	5000049.
USGS MRDS No	A003176.
Alaska Kardex No	109-001, 109-002.

LIK—ZINC

Alternate name: Wulik River
Map location No.: 1

Commodities: Zn, Pb, Ag, Cd

LOCATION-OWNERSHIP

Quadrangle	De Long Mountains.
Mining district	Lisburne.
Elevation	548 m.
Topography	Rugged.
Domain	BLM-administered.
Owner	General Crude Oil Co.-Noranda Exploration, Inc.
Reference point	Claim.
Meridian	Kateel River.
Tract	Sec. 15, T 32 N, R 20 W.
Latitude	68°10′28″ N.
Longitude	163°12′30″ W.

GEOLOGY

Type of ore body	Stratabound, disseminated, stockwork.
Origin	Sedimentation.
Shape of ore body	Lenticular, massive, tabular.
Ore controls	Lithology, bedding.
Mineral names	Sphalerite, galena, pyrite, barite, quartz.
Host formation	Lisburne Group.
Geologic age	Mississippian.
Deformation	Major faulting, folding.
Age of deformation	Post-Tertiary.
Rock types	Chert, shale, limestone.

DEVELOPMENT

Current status	Explored deposit.
Type of operation	Prospect.
Year of discovery	1975.
Discovery method	Not available.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	On-site.
Road requirement	Less than 100 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	21,773,000 mt	9.00 pct Zn, 3.10 pct Pb, 48.00 g/mt Ag	1984	*295*, pp. 6, 42.

REFERENCES

8; *38*; *40*, No. A-6; *120*, pp. 7, 8; *121*, p. 9; *295*, pp. 6, 42; *296*, p. 6; *310*.

USGS quadrangle map	De Long Mountains (A-3), 15′.
USBM MAS sequence No	0020180001.
MSHA Mid No	Not available.
USGS MRDS No	Do.
Alaska Kardex No	018-009.

LITUYA BEACH SANDS—TITANIUM

Alternate name: Lituya Bay Beach Placer
Map location No.: 159

Commodities: Ti, Au, PGM

LOCATION-OWNERSHIP

Quadrangle	Mount Fairweather.
Mining district	Juneau.
Elevation	3 m.
Topography	Gentle.
Domain	National wilderness.
Owner	U.S. Park Service.
Reference point	Mineralized zone.
Meridian	Copper River.
Tract	Sec. 32, T 37 S, R 47 E.
Latitude	58°37'20" N.
Longitude	137°40'30" W.

GEOLOGY

Type of ore body	Placer.
Origin	Sedimentation.
Shape of ore body	Tabular, irregular.
Ore controls	Bedding.
Mineral names	Gold, platinum.
Host formation	Alluvium.
Geologic age	Quaternary.
Deformation	Not available.
Age of deformation	Do.
Rock types	Sand.

DEVELOPMENT

Current status	Past producer.
Type of operation	Placer.
Year of discovery	1867.
Discovery method	Ore-mineral in place.
First production year	1890.
Last production year	1917.
Distance to water supply	More than 10 km.
Road requirement	Less than 50 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	68,800,000 m^3	8.90 kg/m^3 TiO_2. Total hypothetical reserves of beach.	1978	*72*, pp. D23-D24.

REFERENCES

40, No. F-5; *56*; *72*, pp. D6-D7, D23-D24; *215*.

USGS quadrangle map	Mount Fairweather (C-6), 15'.
USBM MAS sequence No	0021110127.
MSHA Mid No	Not available.
USGS MRDS No	Do.
Alaska Kardex No	Do.

LIVENGOOD CREEK—GOLD

Alternate name: Livengood
Map location No.: 41

Commodities: Au, Ag, Sb, Cr, Sn, W

LOCATION-OWNERSHIP

Quadrangle	Livengood.	Reference point	Claim.
Mining district	Tolovana.	Meridian	Fairbanks.
Elevation	197 m.	Tract	Sec. 15, T 8 N, R 5 W.
Topography	Hilly.	Latitude	65°31'30" N.
Domain	BLM-administered.	Longitude	148°33'0" W.
Owner	Callahan Mining Corp.		

GEOLOGY

Type of ore body	Placer.	Host formation	Alluvium.
Origin	Sedimentation.	Geologic age	Quaternary.
Shape of ore body	Irregular.	Deformation	Not available.
Ore controls	Bedding.	Age of deformation	Do.
Mineral names	Gold, magnetite, ilmenite, limonite, pyrite, chromite, stibnite.	Rock types	Gravel, silt.

DEVELOPMENT

Current status	Producer.	Distance to water supply	On-site.
Type of operation	Placer.	Road requirement	None.
		Distance to power supply	Less than 100 km.
Year of discovery	1914.		
Discovery method	Ore-mineral not in place.		
First production year	1915.		
Last production year	1983.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	5,887,000 m³	0.50 g/m³ Au	1975	*375*, p. 366.
Indicated	5,734,000 m³			
Inferred	11,468,000 m³	0.50 g/m³ Au. Reserve data established by use of 800 churn drill holes.		

REFERENCES

40, No. B-32; *55*, p. 239; *74*, p. 21; *77*, pp. 51-52; *78*, p. 63; *79*, p. 56; *80*, p. 47; *81*, p. 31; *101*, pp. 205-208; *105*, p. 37; *106*, p. 82; *120*, pp. 23, 24; *121*, pp. 22, 23; *195*; *215*, pp. 174-176; *216*, pp. 98-99; *219*, p. 21; *220*, p. 29; *234*, pp. 115-117; *244*, p. 5, No. 86; *269*, p. 81, No. 75; *292*, pp. 1-2; *296*, p. 11; *302*, p. 67; *303*, p. 25; *317*; *332*, pp. 1, 3; *333*; *375*; *381*; *453*, pp. 14, 17, 34, 39; *490*, p. 31; *558*, pp. 262-268; *584*; *585*; *600*, p. 19; *643*; *647*, pp. 178-181, 183-184; *798*; *823*, p. 14; *824*, p. 21; *825*, p. 27; *826*, p. 30; *827*, p. 36; *828*, p. 36; *830*, p. 34; *831*, p. 39; *832*, pp. 39-40; *833*, p. 44; *834*, p. 52; *835*, pp. 53-54; *836*, pp. 52-53; *837*, pp. 48-49; *838*, pp. 45-46, 68; *851*, pp. 24-25; *852*, pp. 2, 52; *953*, p. 11.

USGS quadrangle map	Livengood (C-4), 15'.
USBM MAS sequence No	0020490064.
MSHA Mid No	5000998.
USGS MRDS No	A001738.
Alaska Kardex No	049-018, 049-089, 049-158, 049-159, 049-267, 049-281, 049-282, 049-401.

LOST RIVER—TIN

Alternate name: Cassiterite Creek
Map location No.: 32

Commodities: Sn, F, W, Be

LOCATION-OWNERSHIP

Quadrangle	Teller.
Mining district	Port Clarence.
Elevation	107 m.
Topography	Rugged.
Domain	BLM-administered.
Owner	Pan Central Explorations Ltd.
Reference point	Entrance to underground workings.
Meridian	Kateel River.
Tract	Sec. 22, T 1 N, R 41 W.
Latitude	65°28'45" N.
Longitude	167°9'35" W.

GEOLOGY

Type of ore body	Disseminated.
Origin	Metasomatic, hydrothermal.
Shape of ore body	Massive.
Ore controls	Fracturing, igneous.
Mineral names	Cassiterite, scheelite, fluorite, arsenopyrite, azurite, beryl, biotite, calcite, albite, chalcedony, chalcopyrite, chlorite, chrysoberyl, corundum, dickite, dolomite, epidote, euclase, feldspar, andradite, galena, goethite, gold, mica, hematite.
Host formation	Port Clarence Limestone.
Geologic age	Ordovician.
Deformation	Intrusion, metamorphism.
Age of deformation	Cretaceous.
Rock types	Limestone, granite, rhyolite, lamprophyre.

DEVELOPMENT

Current status	Past producer.
Type of operation	Surface-underground.
Year of discovery	1903.
Discovery method	Ore-mineral not in place.
First production year	1913.
Last production year	1955.
Distance to water supply	Less than 3 km.
Road requirement	Less than 10 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	30,679,800 mt	0.16 pct Sn, 17.23 pct CaF_2, 0.03 pct WO_3. Zone 1; grades required calculation by evaluator.	1972	*506*, pp. 1, 4.
Do	3,457,300 mt	30.33 pct CaF_2. Zone 2	1972	*506*, pp. 1, 4.

REFERENCES

40, No. A-31; *55*; *76*, pp. 58, 71; *77*, p. 68; *78*, p. 28; *79*, pp. 19, 62; *80*, pp. 22, 65; *85*, pp. 37-38; *92*, pp. 28-29; *95*, p. 39; *98*, p. 50; *106*, pp. 71, 95; *120*, p. 10; *121*, pp. 13, 19, 40, 41; *150*, pp. 163, 185; *152*, p. 407; *172*, pp. 1-3; *252*, pp. 121-123; *254*, pp. 18-23; *269*, p. 80, No. 34; *287*, pp. 84-88; *304*; *378*, p. 236; *379*, pp. 354-357, 359; *387*, pp. 2-44; *388*; *393*, pp. 9-10; *408*, pp. 89, 91-92; *409*, pp. 146-150; *430*; *484*, pp. 44, 49-50, 52-55; *487*, pp. 262-263; *505*; *506*; *533*, p.41; *534*, pp. 21-22, 52; *562*, pp. 436-437; *782*; *826*, pp. 61-62; *827*, p. 68; *843*, p. 203; *851*, p. 27; *852*, p. 4; *868*, pp. 51-74; *893*, p. 31; *904*, p. 7; *922*, pp. 157-160, 166-167; *937*, p. 1; *980*; *981*.

USGS quadrangle map	Teller (B-5), 15'.
USBM MAS sequence No	0020430003.
MSHA Mid No	Not available.
USGS MRDS No	A003662.
Alaska Kardex No	043-010, 043-022, 043-023, 043-025, 043-026, 043-054, 043-055, 043-056, 043-057, 043-058, 043-059, 043-084, 043-087, 043-090, 043-091, 043-092, 043-093, 043-094, 043-095, 043-096, 043-097, 043-098, 043-099, 043-100, 043-101, 043-104, 043-105, 043-106, 043-108, 043-111, 043-113, 043-114, 043-118, 043-124, 043-126, 043-130, 043-131.

MARGERIE—COPPER

Alternate name: Margerie Glacier
Map location No.: 154

Commodities: Cu, Au, Ag, W, Bi, As, Mo, Ba

LOCATION-OWNERSHIP

Quadrangle	Skagway.
Mining district	Juneau.
Elevation	550 m.
Topography	Very rugged.
Domain	National wilderness.
Owner	U.S. Park Service.
Reference point	Surface workings.
Meridian	Copper River.
Tract	Sec. 17, T 33 S, R 50 E.
Latitude	59°0′40″ N.
Longitude	137°6′0″ W.

GEOLOGY

Type of ore body	Stockwork, disseminated, replacement.
Origin	Hydrothermal.
Shape of ore body	Domelike.
Ore controls	Fracturing, faulting.
Mineral names	Cassiterite, scheelite, fluorite, arsenopyrite, azurite, beryl, biotite, calcite, albite, chalcedony, chalcopyrite, chlorite, chrysoberyl, corundum, dickite, dolomite, epidote, euclase, feldspar, andradite, galena, goethite, gold, mica, hematite.
Host formation	Unnamed igneous.
Geologic age	Tertiary.
Deformation	Faulting, intrusion, metamorphism.
Age of deformation	Tertiary.
Rock types	Quartz monzonite, granodiorite, diorite.

DEVELOPMENT

Current status	Explored prospect.
Type of operation	Prospect.
Year of discovery	1960.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	Less than 10 km.
Road requirement	Do.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	145,000,000 mt	0.20 pct Cu, 0.27 g/mt Au, 4.50 g/mt Ag, 0.01 pct WO_3.	1978	*72*, p. C160.
Do	68,000 mt	0.50 pct Cu, 1.70 g/mt Au, 13.70 g/mt Ag	1978	*72*, p. C161.

REFERENCES

40, No. F-6; *56*, p. 111, No. 2; *72*, pp. C149-C161, plates 1A, 1B, 2; *148*, pp. 53-54; *209*; *222*, p. 5; *223*, p. 5; *236*, p. 95; *417*; *518*; *519*, pp. 3, 5, 26, 35, 40, 43; *548*, p. 16; *933*, p. 159.

USGS quadrangle map	Skagway (A-6), 15′.
USBM MAS sequence No	0021090002.
MSHA Mid No	Not available.
USGS MRDS No	A003178.
Alaska Kardex No	109-057.

MASSIVE CHALCOPYRITE—COPPER

Alternate name: Ship
Map location No.: 155

Commodities: Cu, Au, Ag, W, Zn

LOCATION-OWNERSHIP

Quadrangle ..... Skagway.
Mining district ..... Juneau.
Elevation ..... 1,554 m.
Topography ..... Very rugged.
Domain ..... National wilderness.

Owner ..... U.S. Park Service.

Reference point ..... Mineralized zone.
Meridian ..... Copper River.
Tract ..... Sec. 6, T 33 S, R 52 E.
Latitude ..... 59°1'54" N.
Longitude ..... 136°47'56" W.

GEOLOGY

Type of ore body ..... Replacement.
Origin ..... Metasomatic, metamorphism.
Shape of ore body ..... Massive, lenticular, irregular.
Ore controls ..... Contact zone, igneous.
Mineral names ..... Chalcopyrite, albite, andesine, apatite, biotite, calcite, actinolite, chlorite, covellite, diopside, epidote, garnet, goethite, hornblende, ilmenite, magnetite, oligoclase, powellite, pyrite, pyrrhotite, quartz, sericite, sphalerite, sphene.

Host formation ..... Tidal and Rendau.
Geologic age ..... Devonian.
Deformation ..... Intrusion, metamorphism.
Age of deformation ..... Cretaceous.
Rock types ..... Skarn.

DEVELOPMENT

Current status ..... Raw prospect.
Type of operation ..... Prospect.

Year of discovery ..... 1966.
Discovery method ..... Ore-mineral in place.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... Less than 10 km.
Road requirement ..... Do.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	3,900 mt	5.00 pct Cu, 5.10 g/mt Au, 240.00 g/mt Ag, 0.52 pct WO_3.	1978	*72*, p. C183.

REFERENCES

72, pp. C179-C185; *236*, p. 105; *519*, pp. 4, 40, 43.

USGS quadrangle map ..... Skagway (A-5), 15'.
USBM MAS sequence No ..... 0021090073.
MSHA Mid No ..... Not available.
USGS MRDS No ..... Do.
Alaska Kardex No ..... Do.

MCCARTY—GOLD

Alternate name: American Eagle Vein
Map location No.: 42

Commodities: Au, Sb

LOCATION-OWNERSHIP

Quadrangle	Livengood.
Mining district	Fairbanks.
Elevation	579 m.
Topography	Hilly.
Domain	State.
Owner	Placid Oil Co.
Reference point	Mineralized zone.
Meridian	Fairbanks.
Tract	Sec. 28, T 3 N, R 2 E.
Latitude	65°3′45″ N.
Longitude	147°21′0″ W.

GEOLOGY

Type of ore body	Fissure vein, shear zone, replacement.
Origin	Hydrothermal, oxidation.
Shape of ore body	Irregular.
Ore controls	Fracturing, faulting.
Mineral names	Gold, stibnite, sphalerite, arsenopyrite, jamesonite, quartz.
Host formation	Birch Creek Schist.
Geologic age	Paleozoic.
Deformation	Metamorphism, faulting, intrusion.
Age of deformation	Post-Jurassic.
Rock types	Schist, quartz diorite, monzonite.

DEVELOPMENT

Current status	Past producer.
Type of operation	Surface-underground.
Year of discovery	1908.
Discovery method	Ore-mineral in place.
First production year	1911.
Last production year	1942.
Distance to water supply	On-site.
Road requirement	None.
Distance to power supply	On-site.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	1,925,000 mt	2.11 g/mt Au. Reserves are a result of IMC evaluation of Cleary area.	1970	*656*, p. ii.
Inferred	1,925,000 mt			

REFERENCES

78, p. 60; *96*, p. 34; *97*, p. 31.; *121*; *124*, p. 15; *155*, p. 331; *159*, p. 322; *163*, p. 8; *195*; *410*, pp. 75, 102-106; *451*; *453*, p. 10; *454*, pp. 7-8; *475*, pp. 12-14, 33-35, 41-42; *560*, pp. 411-412; *640*; *656*; *663*, p. 227; *685*; *821*, pp. 164-167; *822*, pp. 149-153; *825*, p. 14; *826*, p. 17; *827*, p. 20; *828*, pp. 19-20; *829*, p. 19; *831*, p. 20; *834*, p. 22; *835*, pp. 23-24; *836*, pp. 25-26; *837*, p. 22; *838*, p. 22; *851*, pp. 53, 230.

USGS quadrangle map	Livengood (A-1), 15′.
USBM MAS sequence No	0020490046.
MSHA Mid No	5001436.
USGS MRDS No	A001832.
Alaska Kardex No	049-103, 049-358.

MIKADO—GOLD

Alternate name: Little Squaw
Map location No.: 26

Commodities: Au, Ag

LOCATION-OWNERSHIP

Quadrangle ..... Chandalar.
Mining district ..... Chandalar.
Elevation ..... 1,303 m.
Topography ..... Rugged.
Domain ..... State.

Reference point ..... Mineralized zone.
Meridian ..... Fairbanks.
Tract ..... Sec. 4, T 31 N, R 3 W.
Latitude ..... 67°32'22" N.
Longitude ..... 148°17'0" W.

Owner ..... Little Squaw Gold Mining Co.

GEOLOGY

Type of ore body ..... Fissure vein, shear zone.
Origin ..... Hydrothermal.
Shape of ore body ..... Tabular, irregular.
Ore controls ..... Faulting, fracturing.
Mineral names ..... Gold, sphalerite, galena, quartz, limonite.

Host formation ..... Unnamed calc-schist.
Geologic age ..... Devonian.
Deformation ..... Minor folding, faulting, metamorphism, intrusion.
Age of deformation ..... Mesozoic.
Rock types ..... Schist, phyllite, limestone, slate, greenstone, granite.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Underground.

Year of discovery ..... 1908.
Discovery method ..... Ore-mineral in place.
First production year ..... 1908.
Last production year ..... 1983.

Distance to water supply ..... On-site.
Road requirement ..... None.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	13,600 mt	85.20 g/mt Au. Mikado ore zone	1980	*265*, p. 2
Indicated	4,500 mt			
Inferred	18,200 mt			
Measured	9,100 mt	58.70 g/mt Au. Little Squaw ore zone		

REFERENCES

40, No. B-20; *55*, p. 204; *62*; *63*; *76*, p. 68; *96*, p. 35; *97*, p. 34; *109*, pp. 3, 14-16; *110*; *121*, pp. 15, 19, 20, 30; *165*, pp. 5, 19-21; *215*, p. 113; *230*, pp. 6-8, 42, 48; *265*; *269*, p. 80, No. 30; *295*, p. 23; *366*; *395*, p. 14; *490*, p. 25; *497*; *498*; *499*; *500*; *501*; *527*, pp. 112-115; *556*, pp. 261-262; *686*; *687*; *688*; *796*, pp. 4-8; *866*; *889*; *964*.

USGS quadrangle map ..... Chandalar 1:250,000.
USBM MAS sequence No ..... 0020310001.
MSHA Mid No ..... 5001401.
USGS MRDS No ..... A003931.
Alaska Kardex No ..... 031-002, 031-012, 031-016, 031-017, 031-021, 031-039, 031-044, 031-048.

MIRROR HARBOR—NICKEL

Alternate name: Alaska Nickel Mines
Map location No.: 180

Commodities: Ni, Cu, Co, PGM

LOCATION-OWNERSHIP

Quadrangle	Sitka.
Mining district	Chichagof.
Elevation	20 m.
Topography	Gentle.
Domain	National wilderness.
Owner-operator	Galactic Resources, Inc.
Reference point	Mineralized zone.
Meridian	Copper River.
Tract	Sec. 22, T 47 S, R 56 E.
Latitude	57°47'7" N.
Longitude	136°18'25" W.

GEOLOGY

Type of ore body	Disseminated, massive.
Origin	Magmatic differentiation.
Shape of ore body	Tabular, irregular.
Ore controls	Igneous, lithology.
Mineral names	Pentlandite, chalcopyrite, pyrrhotite, amphibole, pyroxene, plagioclase.
Host formation	Unnamed mafic intrusive.
Geologic age	Post-Jurassic.
Deformation	Faulting, intrusion.
Age of deformation	Post-Jurassic.
Rock types	Gabbro, norite, diorite.

DEVELOPMENT

Current status	Explored deposit.
Type of operation	Prospect.
Year of discovery	1911.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	Less than 3 km.
Road requirement	Less tham 10 km.
Distance to power supply	Less than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	7,257 mt	1.60 pct Ni, 1.00 pct Cu	1984	*295*, p. 46.
Indicated	6,625 mt	1.57 pct Ni, 0.88 pct Cu		

REFERENCES

40, No. F-21; *55*, p. 144; *56*, p. 100, No. 26; *75*, p. 97; *79*, pp. 25, 41; *115*, pp. 95-98, 110-111; *117*, pp. 348-351; *120*, p. 10; *121*, pp. 15, 39, 43; *158*, p. 78; *208*; *240*, pp. 82-84; *244*, p. 10, No. 242; *262*, pp. 13, 38; *295*, p. 46, No. 102; *296*, pp. 8, 15; *468*, p. 12; *472*, pp. 56-63; *491*; *503*, p. 91; *533*, pp. 22-23, 30; *638*, p. 65; *644*, pp. 125-133; *652*; *669*; *748*, p. 3; *795*; *899*; *904*, p. 7; *985*.

USGS quadrangle map	Sitka (D-7), 15'.
USBM MAS sequence No	0021140068.
MSHA Mid No	Not available.
USGS MRDS No	A003133.
Alaska Kardex No	114-017.

MORELOCK CREEK—GOLD

Alternate name: Homestake Creek
Map location No.: 38

Commodities: Au, Ag, Sn

LOCATION-OWNERSHIP

Quadrangle ..... Tanana.
Mining district ..... Melozitna.
Elevation ..... 151 m.
Topography ..... Hilly.
Domain ..... BLM-administered.

Owner ..... Edward Vogt Estate.

Reference point ..... Claim.
Meridian ..... Fairbanks.
Tract ..... Sec. 30, T 6 N, R 18 W.
Latitude ..... 65°19'20" N.
Longitude ..... 151°20'12" W.

GEOLOGY

Type of ore body ..... Placer.
Origin ..... Sedimentation.
Shape of ore body ..... Irregular.
Ore controls ..... Bedding, fracturing.
Mineral names ..... Gold, cassiterite, magnetite, limonite, hematite, garnet.

Host formation ..... Alluvium.
Geologic age ..... Quaternary.
Deformation ..... Not available.
Age of deformation ..... Do.
Rock types ..... Gravel.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Placer.

Year of discovery ..... 1901.
Discovery method ..... Ore-mineral not in place.
First production year ..... 1902.
Last production year ..... 1944.

Distance to water supply ..... On-site.
Road requirement ..... Less than 50 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	91,000 m^3	0.29 g/m^3 Au, 90.19 g/m^3 Sn. Ag mentioned in past production but not in assay.	1945	*895*, p. 8.

REFERENCES

94, p. 55; *162*, p. 5; *283*, p. 383; *288*, p. 82, plate 2; *563*, p. 43; *831*, p. 43; *833*, p. 47; *835*, pp. 57-58; *887*; *895*, p. 8.

USGS quadrangle map ..... Tanana (B-3), 15'.
USBM MAS sequence No ..... 0020480013.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A003567.
Alaska Kardex No ..... 048-006, 048-042, 048-053.

MOTH BAY—ZINC

Alternate name: Maiden Bay
Map location No.: 232

Commodities: Zn, Cu, Ag, Au, Pb

LOCATION-OWNERSHIP

Quadrangle ..... Ketchikan.
Mining district ..... Ketchikan.
Elevation ..... 100 m.
Topography ..... Hilly.
Domain ..... National forest.

Owner ..... Robert Emmert Gray.

Reference point ..... Entrance to underground workings.
Meridian ..... Copper River.
Tract ..... Sec. 7, T 76 S, R 93 E.
Latitude ..... 55°17'50" N.
Longitude ..... 131°20'30" W.

GEOLOGY

Type of ore body ..... Stratiform, replacement.
Origin ..... Hydrothermal.
Shape of ore body ..... Tabular, irregular.
Ore controls ..... Lithology, bedding.
Mineral names ..... Sphalerite, chalcopyrite, galena, pyrite, pyrrhotite, calcite, quartz, muscovite, magnetite.

Host formation ..... Unnamed mica schists.
Geologic age ..... Jurassic.
Deformation ..... Metamorphism, intrusion, major faulting.
Age of deformation ..... Cretaceous.
Rock types ..... Schist, quartzite.

DEVELOPMENT

Current status ..... Explored prospect.
Type of operation ..... Prospect.

Year of discovery ..... 1911.
Discovery method ..... Ore-mineral in place.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... Less than 3 km.
Road requirement ..... Less than 10 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	2,700 mt	2.90 pct Cu. High-grade copper zone	1953	*719*, pp. 69-70.
Indicated	4,500 mt			
Measured	1,630 mt	2.00 pct Zn, 0.50 pct Cu, Low-grade zinc-copper zone.		
Indicated	1,630 mt			
Inferred	100,000 mt			
Measured	31,750 mt	7.50 pct Zn, 1.00 pct Cu. High-grade zinc-copper zone.		
Indicated	59,900 mt			

REFERENCES

40, No. F-71; *56*; *719*, pp. 59-71; *820*, pp. 90-91; *827*, p. 18; *828*, pp. 15-16; *904*, p. 6; *945*.

USGS quadrangle map ..... Ketchikan (B-5), 15'.
USBM MAS sequence No ..... 0021200025.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A001641.
Alaska Kardex No ..... 120-048.

MOUNTAIN VIEW—TUNGSTEN

Alternate name: Gray Copper Vein
Map location No.: 210

Commodities: W, Ag, Au, Pb

LOCATION-OWNERSHIP

Quadrangle ..... Ketchikan.
Mining district ..... Hyder.
Elevation ..... 212 m.
Topography ..... Very rugged.
Domain ..... National forest.

Owner ..... Mineral Basin Mining Co.

Reference point ..... Claim.
Meridian ..... Copper River.
Tract ..... Sec. 11, T 68 S, R 99 E.
Latitude ..... 55°59'20" N.
Longitude ..... 130°2'58" W.

GEOLOGY

Type of ore body ..... Fissure vein.
Origin ..... Hydrothermal.
Shape of ore body ..... Irregular, tabular.
Ore controls ..... Fracturing, igneous.
Mineral names ..... Scheelite, galena, sphalerite, chalcopyrite, pyrite, quartz, pyrrhotite, barite, chlorite.

Host formation ..... Texas Creek Granodiorite.
Geologic age ..... Jurassic.
Deformation ..... Intrusion, faulting.
Age of deformation ..... Jurassic.
Rock types ..... Granodiorite, tuff, volcanic breccia, quartzite, slate, schist.

DEVELOPMENT

Current status ..... Explored prospect.
Type of operation ..... Prospect.

Year of discovery ..... 1917.
Discovery method ..... Ore-mineral in place.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... Less than 3 km.
Road requirement ..... Less than 10 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	8,137 mt	0.52 pct WO_3, 69.94 g/mt Ag, 1.78 g/mt Au.	1945	*627*, p. 1.
Inferred	1,415 mt			

REFERENCES

47, pp. 42, 68-69; *81*, p. 21; *113*, pp. 43, 63-67; *115*, pp. 74, 76-77; *116*, pp. 41-42, 54-55; *117*, pp. 317, 324, 330, 358; *320*, pp. 1-10; *600*, p. 31; *627*; *826*, p. 16; *827*, p. 17; *843*, p. 171; *893*, pp. 4-5, 36, 38, 45-49; *968*, pp. 138-139.

USGS quadrangle map ..... Ketchikan (D-1), 15'.
USBM MAS sequence No ..... 0021200157.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A001642.
Alaska Kardex No ..... Not available.

NOME BEACHES—GOLD

Alternate name: Outer Submarine Beach
Map location No.: 49

Commodities: Au, Ag

LOCATION-OWNERSHIP

Quadrangle	Nome.	Reference point	Mineralized zone.
Mining district	Nome.	Meridian	Kateel River.
Elevation	11 m.	Tract	Sec. 26, T 11 S, R 34 W.
Topography	Gentle.	Latitude	64°30'0" N.
Domain	BLM-administered.	Longitude	165°25'0" W.
Operator	Alaska Gold Co.		

GEOLOGY

Type of ore body	Placer.	Host formation	Alluvium.
Origin	Sedimentation.	Geologic age	Quaternary.
Shape of ore body	Irregular.	Deformation	Not available.
Ore controls	Bedding.	Age of deformation	Do.
Mineral names	Gold, silver.	Rock types	Gravel, sand, clay.

DEVELOPMENT

Current status	Producer.	Distance to water supply	On-site.
Type of operation	Placer.	Road requirement	Do.
		Distance to power supply	Less than 10 km.
Year of discovery	1898.		
Discovery method	Ore-mineral not in place.		
First production year	1898.		
Last production year	Not available.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	94,800,000 m^3	0.39 g/m^3 Au	1977	*803*, p. 62.

REFERENCES

4; *5*; *40*, No. A-49; *73*, pp. 263-275; *80*, pp. 7-67; *99*; *105*, pp. 3-49; *108*, pp. 1-180; *120*, pp. 23, 24; *121*, pp. 15, 20, 30; *151*; *160*; *201*; *215*; *226*, p. 213; *255*; *269*, p. 80, No. 43; *281*; *295*, pp. 8, 24; *296*, pp. 10, 21; *305*; *364*; *396*; *429*; *430*; *434*; *490*; *550*; *567*; *592*; *595*; *600*; *608*; *636*; *651*; *668*; *785*; *800*; *803*, p. 62; *809*; *810*; *817*; *823*, pp. 1-30; *824*, pp. 1-50; *825*; *826*; *827*; *828*; *829*; *830*; *831*, pp. 47-48, 56-57; *832*; *833*; *834*; *835*; *836*; *837*; *838*; *842*; *843*; *845*; *851*; *852*; *868*, pp. 3-52; *882*; *989*.

USGS quadrangle map	Nome (B-1), 15'.
USBM MAS sequence No	0020520017.
MSHA Mid No	Not available.
USGS MRDS No	A002502.
Alaska Kardex No	Not available.

NUNATAK—MOLYBDENUM

Alternate name: O.K. Nos. 1-4
Map location No.: 163

Commodities: Mo, Cu, Au, Ag, Fe

LOCATION-OWNERSHIP

Quadrangle ..... Mount Fairweather.
Mining district ..... Juneau.
Elevation ..... 335 m.
Topography ..... Rugged.
Domain ..... National wilderness.

Owner ..... U.S. Park Service.

Reference point ..... Claim.
Meridian ..... Copper River.
Tract ..... Sec. 20, T 33 S, R 56 E.
Latitude ..... 58°59'20" N.
Longitude ..... 136°6'0" W.

GEOLOGY

Type of ore body ..... Stockwork, disseminated, replacement.
Origin ..... Hydrothermal.
Shape of ore body ..... Massive, irregular.
Ore controls ..... Igneous, fracturing.
Mineral names ..... Molybdenite, chalcopyrite, bornite, andesine, apatite, biotite, actinolite, calcite, albite, chert, chlorite, clinozoisite, diopside, enargite, epidote, feldspar, garnet, hornblende, orthoclase, magnetite, malachite, alunite, montmorillonite.

Host formation ..... Tidal Formation.
Geologic age ..... Devonian.
Deformation ..... Metamorphism, intrusion, faulting.
Age of deformation ..... Cretaceous.
Rock types ..... Chert, skarn.

DEVELOPMENT

Current status ..... Explored prospect.
Type of operation ..... Prospect.

Year of discovery ..... 1941.
Discovery method ..... Ore-mineral in place.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... Less than 3 km.
Road requirement ..... Less than 10 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	2,038,400 mt	0.07 pct MoS_2, 0.02 pct Cu. Stockwork deposit, above sea level.	1971	*519*, p. 1.
Do	117,507,900 mt	0.03 pct MoS_2, 0.02 pct Cu. Remainder of stockworks and fault zone deposit.		
Indicated	7,438,900 mt	0.06 pct Mo, 0.02 pct Cu. Stockwork with conspicuous molybdenite.	1978	*72*, p. C294.
Inferred	8,255,400 mt			
Indicated	124,284,300 mt	0.04 pct Mo, 0.02 pct Cu. Stockwork with inconspicuous molybdenite.		

REFERENCES

39; *40*, No. F-10; *55*, p. 163; *56*; *72*, pp. C274-C295, plates 1A, 1B, 2; *198*; *233*, pp. 42-45; *246*, p. 193; *468*, p. 12; *518*; *519*; *695*, pp. 56-57; *696*, pp. 56-57; *767*, p. 49; *790*, pp. 1-6; *843*, pp. 178-180; *906*, pp. 9-18; *913*; *941*; *987*, p. 150.

USGS quadrangle map ..... Mount Fairweather (D-1), 15'.
USBM MAS sequence No ..... 0021110050.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A002101.
Alaska Kardex No ..... 111-020, 111-041, 111-050, 111-051, 111-057.

ORANGE HILL—COPPER

Alternate name: Alaska Nabesna Corporation
Map location No.: 101

Commodities: Cu, Mo, Zn, Au, Ag

LOCATION-OWNERSHIP

Quadrangle	Nabesna.	Reference point	Mineralized zone.
Mining district	Chisana.	Meridian	Copper River.
Elevation	884 m.	Tract	Sec. 20, T 5 N, R 14 E.
Topography	Very rugged.	Latitude	62°12′12″ N.
Domain	Federal.	Longitude	142°50′0″ W.
Owner-operator	Wallace McGregor.		

GEOLOGY

Type of ore body	Stockwork, disseminated.	Host formation	Nabesna Pluton.
Origin	Hydrothermal.	Geologic age	Upper Cretaceous.
Shape of ore body	Massive.	Deformation	Intrusion.
Ore controls	Igneous.	Age of deformation	Upper Cretaceous.
Mineral names	Chalcopyrite, pyrite, molybdenite, tetrahedrite, sphalerite, quartz, feldspar, hornblende, biotite, magnetite, chlorite, sericite, calcite, kaolin, limonite, bornite.	Rock types	Quartz diorite, granodiorite.

DEVELOPMENT

Current status	Explored deposit.	Distance to water supply	On-site.
Type of operation	Prospect.	Road requirement	Less than 50 km.
		Distance to power supply	More than 100 km.
Year of discovery	1898.		
Discovery method	Ore-mineral in place.		
First production year	Not applicable.		
Last production year	Do.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	290,302,000 mt	0.35 pct Cu, 0.03 pct MoS_2	1979	*269*, p. 83.

REFERENCES

40. No. E-49; *55*, pp. 205, 208-209; *121*, p. 11; *138*, p. 227; *264*, pp. 9-10; *269*, p. 83, No. 145; *295*, p. 45, No. 73; *417*; *522*; *552*, pp. 33-45; *590*, pp. 189, 201, 203, 205-207, 209; *611*, p. 103; *619*, pp. 54-55, 58; *635*, p. 4; *701*; *706*, pp. 5, 14, 18-19, 24; *707*; *708*; *709*; *710*; *713*; *715*; *824*, p. 36; *826*, p. 54; *827*, p. 60; *828*, p. 63; *843*, p. 193; *881*; *904*, pp. 5-6; *938*, pp. 1-16; *948*, pp. 166-168; *952*, pp. 6-7; *955*, p. 108.

USGS quadrangle map	Nabesna (A-4), 15′.
USBM MAS sequence No	002078015.
MSHA Mid No	Not available.
USGS MRDS No	A002357.
Alaska Kardex No	078-014, 078-061.

PORT SNETTISHAM—IRON

Alternate name: Michele
Map location No.: 186

Commodity: Fe

LOCATION-OWNERSHIP

Quadrangle	Sumdum.
Mining district	Juneau.
Elevation	152 m.
Topography	Rugged.
Domain	National forest.
Owner	Andy and Sam Pekovich.
Reference point	Mineralized zone.
Meridian	Copper River.
Tract	Sec. 8, T 45 S, R 72 E.
Latitude	57°59'0" N.
Longitude	133°46'30" W.

GEOLOGY

Type of ore body	Disseminated, massive.
Origin	Magmatic differentiation.
Shape of ore body	Tabular, irregular.
Ore controls	Igneous.
Mineral names	Magnetite, ilmenite, biotite, pyroxene, sphene, apatite, epidote, hornblende, chlorite, pyrrhotite, chalcopyrite, spinel.
Host formation	Wrangell-Revillagigedo.
Geologic age	Upper Jurassic.
Deformation	Intrusion, metamorphism.
Age of deformation	Upper Jurassic.
Rock types	Phyllite, diorite, pyroxenite.

DEVELOPMENT

Current status	Explored prospect.
Type of operation	Prospect.
Year of discovery	1895.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	Less than 3 km.
Road requirement	Less than 10 km.
Distance to power supply	Do.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	450,000,000 mt	19.00 pct Fe	1974	*312*.

REFERENCES

40, No. F-30; *49*; *55*, pp. 155, 164; *56*, p. 120, No. 2; *71*, pp. 128, 165; *73*, p. 541; *98*, p. 33; *105*, p. 24; *115*, pp. 133-134; *117*, p. 352; *147*, pp. 81, 102; *212*; *242*, pp. 25-26; *244*, p. 10, No. 250; *312*; *322*, p. 5; *418*, pp. 2, 4-5, 9-12, 16-17, 23; *468*; *482*, pp. 39-40; *485*, p. 139; *486*, p. 97; *517*, p. 4; *638*, p. 64; *863*, pp. 47-48; *896*; *904*, p. 10; *922*, p. 36; *992*, p. 90; *996*, p. 53.

USGS quadrangle map	Sumdum (D-6), 15'.
USBM MAS sequence No	0021150001.
MSHA Mid No	Not available.
USGS MRDS No	A003396.
Alaska Kardex No	115-010, 115-019, 115-054.

POTATO MOUNTAIN—TIN

Alternate name: Buck Creek
Map location No.: 31

Commodity: Sn

LOCATION-OWNERSHIP

Quadrangle ..... Teller.
Mining district ..... Port Clarence.
Elevation ..... 106 m.
Topography ..... Rolling.
Domain ..... BLM-administered.

Owner ..... Richard Lee & Associates.

Reference point ..... Mineralized zone.
Meridian ..... Kateel River.
Tract ..... Sec. 22, T 3 N, R 43 W.
Latitude ..... 65°38'30" N.
Longitude ..... 167°31'0" W.

GEOLOGY

Type of ore body ..... Placer.
Origin ..... Sedimentation.
Shape of ore body ..... Irregular.
Ore controls ..... Bedding, fracturing.
Mineral names ..... Cassiterite, hematite, magnetite, pyrite, gold, quartz, feldspar, tourmaline, garnet, calcite.

Host formation ..... Alluvium.
Geologic age ..... Quaternary.
Deformation ..... Not available.
Age of deformation ..... Do.
Rock types ..... Gravel.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Placer.

Year of discovery ..... 1901.
Discovery method ..... Ore-mineral not in place.
First production year ..... 1911.
Last production year ..... 1953.

Distance to water supply ..... Less than 10 km.
Road requirement ..... Less than 50 km.
Distance to power supply ..... Less than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference ...	878,000 m^3	195.90 g/m^3 Sn	1945	*390*, p. 11.

REFERENCES

40, No. A-30; *78*, pp. 27-28; *80*, p. 22; *86*, pp. 88-90; *92*, pp. 28-29; *95*, p. 39; *98*, p. 50; *103*; *104*; *151*, p. 195; *160*, p. 393; *215*; *253*; *255*, pp. 268-282; *287*; *378*, p. 236; *379*; *387*; *390*; *391*; *392*; *393*; *408*; *409*, pp. 145-147; *430*; *484*; *487*; *505*; *562*, pp. 443-458; *632*; *633*; *779*; *868*; *923*.

USGS quadrangle map ..... Teller (C-6), 15'.
USBM MAS sequence No ..... 0020430005.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A003672.
Alaska Kardex No ..... 043-012, 043-041, 043-047, 043-049, 043-050, 043-062, 043-107, 043-109, 043-110, 043-111, 043-125.

QUARTZ HILL—MOLYBDENUM

Alternate name: JES 1-1074
Map location No.: 235

Commodity: Mo

LOCATION-OWNERSHIP

Quadrangle ..... Ketchikan.
Mining district ..... Ketchikan.
Elevation ..... 808 m.
Topography ..... Rugged.
Domain ..... National monument.

Owner-operator ..... Pacific Coast Molybdenum Co. (U.S. Borax).

Reference point ..... Mineralized zone.
Meridian ..... Copper River.
Tract ..... Sec. 2, T 75 S, R 98 E.
Latitude ..... 55°24'5" N.
Longitude ..... 130°29'0" W.

GEOLOGY

Type of ore body ..... Stockwork.
Origin ..... Hydrothermal.
Shape of ore body ..... Massive.
Ore controls ..... Fracturing.
Mineral names ..... Molybdenite, quartz, feldspar.

Host formation ..... Quartz Hill Stock.
Geologic age ..... Tertiary.
Deformation ..... Intrusion.
Age of deformation ..... Tertiary.
Rock types ..... Quartz monzonite, aplite, quartz latite.

DEVELOPMENT

Current status ..... Explored deposit.
Type of operation ..... Prospect.

Year of discovery ..... 1974.
Discovery method ..... Geochemical anomaly.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... Less than 10 km.
Road requirement ..... Less than 50 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	1,360,500,000 mt	0.14 pct MoS_2. Cutoff grade set at 0.07 pct MoS_2	1982	*907*, p. 2.
Measured	181,400,000 mt	0.20 pct MoS_2. Cutoff grade set at 0.07 pct MoS_2		
Do	1,361,000,000 mt	0.14 pct Mo	1984	*295*, pp. 19, 47.
Do	444,500,000 mt	0.22 pct Mo		

REFERENCES

3; *6*; *7*; *20*; *21*; *22*; *23*; *25*; *26*; *27*; *29*; *30*; *31*; *40*, No. F-73; *56*; *120*, p. 19; *121*, pp. 14, 26, 27; *269*, p. 85, No. 241; *295*, pp. 19, 47; *296*, pp. 1, 7, 15; *309*; *315*; *316*, p. 35; *319*, p. 35; *327*; *328*; *365*, pp. 24-27; *373*; *376*; *428*; *432*; *474*; *504*; *532*; *577*, pp. 475-476; *578*; *579*; *580*; *581*; *582*; *641*; *642*, pp. B7-B8; *700*; *855*; *856*; *857*; *858*, p. A9; *859*; *860*; *861*; *862*; *870*; *884*; *907*; *988*.

USGS quadrangle map ..... Ketchikan (B-2), 15'.
USBM MAS sequence No ..... 0021200067.
MSHA Mid No ..... 5001230.
USGS MRDS No ..... Not available.
Alaska Kardex No ..... 120-157, 120-158.

RED BLUFF BAY—CHROMIUM

Alternate name: Red Bluff Deposit 1-8
Map location No.: 197

Commodity: Cr

LOCATION-OWNERSHIP

Quadrangle	Port Alexander.
Mining district	Chichagof.
Elevation	106 m.
Topography	Very rugged.
Domain	National wilderness.
Owner	U.S. Forest Service.
Reference point	Mineralized zone.
Meridian	Copper River.
Tract	Sec. 9, T 58 S, R 68 E.
Latitude	56°51'10" N.
Longitude	134°42'40" W.

GEOLOGY

Type of ore body	Stratiform, disseminated.
Origin	Magmatic differentiation.
Shape of ore body	Tabular, lenticular, irregular.
Ore controls	Igneous, faulting.
Mineral names	Chromite, serpentine, antigorite, ankerite, talc, diopside, olivine.
Host formation	Unnamed ultramafics.
Geologic age	Pre-Triassic.
Deformation	Intrusion, metamorphism.
Age of deformation	Pre-Triassic.
Rock types	Dunite, pyroxenite.

DEVELOPMENT

Current status	Explored prospect.
Type of operation	Prospect.
Year of discovery	1933.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	Less than 10 km.
Road requirement	Less than 50 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	2,100 mt	12.00 pct Cr_2O_3	1942	*370*, p. 186.
Indicated	29,500 mt			
Not reported in reference	517 mt	40.00 pct Cr_2O_3	1984	*295*, p. 46.
Do	26,308 mt	18.00 pct Cr_2O_3. Cr_2O_3 grade ranges 18-35 pct.		

REFERENCES

55, p. 145; *56*, p. 94, No. 24; *203*; *238*, p. 21; *244*, p. 10, No. 246; *295*, p. 46, No. 109; *370*, pp. 173, 178-187; *471*, pp. 73-75; *503*, pp. 91-92; *833*, p. 88; *834*, p. 98; *904*, p. 11.

USGS quadrangle map	Port Alexander (D-3), 15'.
USBM MAS sequence No	0021160001.
MSHA Mid No	Not available.
USGS MRDS No	A002669.
Alaska Kardex No	116-008.

RED DOG—ZINC

Alternate name: Deadlock Mountain
Map location No.: 2

Commodities: Zn, Pb, Ag, Ba

LOCATION-OWNERSHIP

Quadrangle	De Long Mountains.	Reference point	Mineralized zone.
Mining district	Lisburne.	Meridian	Kateel River.
Elevation	273 m.	Tract	Sec. 20, T 31 N, R 18 W.
Topography	Rugged.	Latitude	68°4'15" N.
Domain	Private.	Longitude	162°49'20" W.
Operator	Cominco American Inc.		

GEOLOGY

Type of ore body	Stratabound, breccia fill.	Host formation	Tupik Formation.
Origin	Sedimentation.	Geologic age	Mississippian.
Shape of ore body	Tabular, lenticular, massive.	Deformation	Major faulting, folding.
Ore controls	Bedding, lithology.	Age of deformation	Mesozoic.
Mineral names	Sphalerite, galena, pyrite, barite, quartz.	Rock types	Chert, shale, limestone.

DEVELOPMENT

Current status	Explored deposit.	Distance to water supply	On-site.
Type of operation	Prospect.	Road requirement	Less than 100 km.
		Distance to power supply	More than 100 km.
Year of discovery	1968.		
Discovery method	Geochemical anomaly.		
First production year	Not applicable.		
Last production year	Do.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	77,111,000 mt	17.10 pct Zn, 5.00 pct Pb, 82.24 g/mt Ag	1984	*295*, pp. 15, 42.
Indicated	77,000,000 mt	17.10 pct Zn, 5.00 pct Pb, 75.00 g/mt Ag	1986	*122*, p. 11.

REFERENCES

40, No. A-7; *120*, pp. 7, 16; *121*, p. 9; *295*, pp. 6, 15, 42; *296*, pp. 1, 2, 6; *439*, pp. 7-11; *662*; *883*.

USGS quadrangle map	De Long Mountains (A-2), 15'.
USBM MAS sequence No	0020180002.
MSHA Mid No	Not available.
USGS MRDS No	A000933.
Alaska Kardex No	018-004, 018-005, 018-013, 018-014, 018-015, 018-016, 018-018, 018-019, 018-028, 018-029, 018-030, 018-031.

RED MOUNTAIN—CHROMIUM

Alternate name: Star No. 4
Map location No.: 152

Commodities: Cr, Fe, Si

LOCATION-OWNERSHIP

Quadrangle	Seldovia.
Mining district	Homer.
Elevation	549 m.
Topography	Very rugged.
Domain	Private.
Owner	Cook Inlet Region, Inc.
Reference point	Claim.
Meridian	Seward.
Tract	Sec. 28, T 9 S, R 13 W.
Latitude	59°22′30″ N.
Longitude	151°28′30″ W.

GEOLOGY

Type of ore body	Stratiform.
Origin	Magmatic differentiation.
Shape of ore body	Tabular, irregular.
Ore controls	Igneous.
Mineral names	Chromite, olivine, serpentine, garnet, pyroxene, amphibole, ilmenite, augite, iron.
Host formation	Red Mountain Pluton.
Geologic age	Upper Jurassic.
Deformation	Intrusion.
Age of deformation	Upper Jurassic.
Rock types	Dunite, pyroxenite, serpentinite.

DEVELOPMENT

Current status	Past producer.
Type of operation	Underground.
Year of discovery	1909.
Discovery method	Ore-mineral in place.
First production year	1943.
Last production year	1957.
Distance to water supply	Less than 3 km.
Road requirement	None.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	90,000 mt	45.00 pct Cr_2O_3, 15.50 pct Fe, 19.10 pct SiO_2	1922	*353*, p. 43.
Inferred	220,000 mt	42.00 pct Cr_2O_3, 15.50 pct Fe, 19.10 pct SiO_2. Cr:Fe ratio 2.7:1.		
Do	29,540,700 mt	5.10 pct Cr_2O_3. Grade required calculation by evaluator.	1984	*324*, p. 34.

REFERENCES

40, No. D-73; *47*, pp. 69-70; *55*, pp. 78-79; *79*, p. 22; *80*, p. 24; *85*, p. 40; *121*, pp. 14, 15, 40; *207*; *239*, pp. 28-31; *244*, p. 9, No. 214; *269*, p. 83, No. 166; *324*; *353*, pp. 1-2, 13, 16-29, 44-45; *354*, pp. 101, 111, 120, 122, 123; *362*, pp. 168, 169; *369*, pp. 140, 141, 148, 152, 163-175; *477*, p. 6; *522*; *534*, p. 34; *540*, pp. 237, 238; *553*, pp. 265, 267; *625*, p. 5; *774*; *789*; *792*; *829*, pp. 79, 80; *830*, p. 75; *831*, p. 81; *832*, p. 83; *833*, pp. 87, 88; *834*, p. 98; *904*, pp. 10, 11; *960*.

USGS quadrangle map	Seldovia (B-4), 15′.
USBM MAS sequence No	0021040001.
MSHA Mid No	Not available.
USGS MRDS No	A002811.
Alaska Kardex No	104-012, 104-013, 104-014, 104-015, 104-017, 104-018, 104-048, 104-049, 104-063, 104-065, 104-080.

RIVERSIDE—TUNGSTEN

Alternate name: Lindeborg Vein
Map location No.: 210

Commodities: W, Pb, Ag, Au, Cu

LOCATION-OWNERSHIP

Quadrangle ..... Bradfield Canal.
Mining district ..... Hyder.
Elevation ..... 97 m.
Topography ..... Very rugged.
Domain ..... National forest.

Owner ..... Walter Moa and Associates.

Reference point ..... Entrance to underground workings.
Meridian ..... Copper River.
Tract ..... Sec. 2, T 68 S, R 99 E.
Latitude ..... 56°0′10″ N.
Longitude ..... 130°4′15″ W.

GEOLOGY

Type of ore body ..... Shear zone, fissure vein.
Origin ..... Metasomatic.
Shape of ore body ..... Tabular, irregular.
Ore controls ..... Faulting, contact zone.
Mineral names ..... Scheelite, galena, chalcopyrite, sphalerite, barite, tetrahedrite, pyrite, quartz, calcite, gold, pyrrhotite, ankerite.

Host formation ..... Texas Creek Granodiorite.
Geologic age ..... Jurassic.
Deformation ..... Intrusion, folding, major faulting.
Age of deformation ..... Jurassic.
Rock types ..... Granodiorite, greenstone, tuff, volcanic breccia, slate, quartzite, limestone.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Underground.

Year of discovery ..... 1924.
Discovery method ..... Ore-mineral in place.
First production year ..... 1924.
Last production year ..... 1949.

Distance to water supply ..... On-site.
Road requirement ..... None.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	3,000 mt	1.20 pct WO_3	1945	*626*, p. 12.
Indicated	4,100 mt			
Inferred	11,790 mt	0.50 pct WO_3		

REFERENCES

40, No. F-52; *47*, pp. 68-69; *55*, p. 147; *56*; *81*, p. 21; *113*, pp. 43, 77-81; *115*, pp. 74-77, 79-82; *116*, pp. 41, 53; *117*, pp. 317, 324, 330, 347; *121*, pp. 13, 17, 40; *126*, pp. 123, 125-126, 128-136; *158*, p. 97; *179*; *468*, p. 13; *566*, p. 141; *600*, p. 30; *626*; *638*, pp. 53-55, 63-64; *823*, p. 23; *824*, p. 37; *825*, pp. 12, 46, 49, 51; *826*, p. 15; *827*, p. 17; *830*, p. 16; *831*, p. 16; *838*, p. 94; *893*, pp. 4-5, 36-44; *962*, pp. 30, 33, 35, 42, 44; *968*, p. 139.

USGS quadrangle map ..... Bradfield Canal (A-1), 15′.
USBM MAS sequence No ..... 0021180053.
MSHA Mid No ..... 5000069.
USGS MRDS No ..... A000425.
Alaska Kardex No ..... 118-041, 118-074.

SALMON RIVER—PLATINUM GROUP

Alternate name: Goodnews Bay Mine
Map location No.: 158

Commodities: PGM, Au, Cr

LOCATION-OWNERSHIP

Quadrangle	Hagemeister Island.
Mining district	Goodnews Bay.
Elevation	53 m.
Topography	Gentle.
Domain	BLM-administered.
Owner-operator	Hanson Properties, Inc.
Reference point	Claim.
Meridian	Seward.
Tract	Sec. 25, T 14 S, R 75 W.
Latitude	58°55'30" N.
Longitude	161°42'45" W.

GEOLOGY

Type of ore body	Placer, sedimentary.
Origin	Sedimentation.
Shape of ore body	Irregular.
Ore controls	Bedding.
Mineral names	Platinum, iridosmine, gold, ilmenite, chromite, magnetite, sperrylite, enstatite, rutile, tremolite, epidote, spinel, diamond, tourmaline, topaz, corundum.
Host formation	Alluvium.
Geologic age	Quaternary.
Deformation	Not available.
Age of deformation	Do.
Rock types	Gravel.

DEVELOPMENT

Current status	Past producer.
Type of operation	Placer.
Year of discovery	1926.
Discovery method	Ore-mineral not in place.
First production year	1927.
Last production year	1984.
Distance to water supply	On-site.
Road requirement	None.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	47,800,000 m^3	0.33 g/m^3 Pt.	1981	*314*.

REFERENCES

13, No. 547; *40*, No. D-56; *120*, pp. 10, 25; *121*, pp. 5, 6, 14, 23, 31, 39; *122*, p. 27; *187*; *215*, p. 50; *216*, pp. 29-30; *217*, p. 24, No. 8; *218*, pp. 14, 18, 19, 22, 24, 27, 31; *244*, p. 9, No. 206; *295*, p. 11; *296*, pp. 8, 12, 21; *302*, p. 50, No. 6; *314*; *414*; *554*, pp. 77, 79-88; *559*, pp. 65-67; *568*, pp. 127-128; *569*, p. 26; *831*, pp. 67-68; *833*, p. 73; *834*, p. 83; *835*, pp. 62, 89; *836*, pp. 61, 82-83; *837*, pp. 76-77; *838*, pp. 73-74.

USGS quadrangle map	Hagemeister Island (D-6), 15'.
USBM MAS sequence No	0021230004.
MSHA Mid No	5000338.
USGS MRDS No	A001253.
Alaska Kardex No	123-002, 123-004, 123-008, 123-019.

SALT CHUCK—PLATINUM GROUP

Alternate name: Donald P. Richter
Map location No.: 219

Commodities: PGM, Cu, Ag, Au, V, Fe

LOCATION-OWNERSHIP

Quadrangle ..... Craig.
Mining district ..... Ketchikan.
Elevation ..... 120 m.
Topography ..... Rugged.
Domain ..... National forest.

Owner ..... Orbex Minerals.

Reference point ..... Entrance to underground workings.
Meridian ..... Copper River.
Tract ..... Sec. 17, T 72 S, R 84 E.
Latitude ..... 55°38'0" N.
Longitude ..... 132°33'30" W.

GEOLOGY

Type of ore body ..... Disseminated.
Origin ..... Magmatic differentiation.
Shape of ore body ..... Irregular.
Ore controls ..... Igneous, fracturing.
Mineral names ..... Bornite, chalcopyrite, copper, chalcocite, covellite, gold, silver, palladium, platinum, augite, feldspar, magnetite, chlorite, epidote, pyrite.

Host formation ..... Coast Range Intrusives.
Geologic age ..... Mesozoic.
Deformation ..... Intrusion, faulting.
Age of deformation ..... Mesozoic.
Rock types ..... Gabbro, pyroxenite, diorite, basalt.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Surface-underground.

Year of discovery ..... 1905.
Discovery method ..... Ore-mineral in place.
First production year ..... 1907.
Last production year ..... 1941.

Distance to water supply ..... Less than 3 km.
Road requirement ..... Less than 10 km.
Distance to power supply ..... Less than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	138,800 mt	0.55 pct Cu, 2.74 g/mt Ag, 0.14 g/mt Au. North ore body; no PGM found in drill holes.	1945	*349*, p. 18.
Do	18,100 mt	0.14 g/mt PGM, 0.92 pct Cu, 8.92 g/mt Ag, 0.86 g/mt Au. Middle ore body.		
Do	9,100 mt	0.14 g/mt PGM, 0.50 pct Cu, 7.89 g/mt Ag, 0.28 g/mt Au. Southeast ore body.		

REFERENCES

40, No. F-58; *47*, pp. 30, 73; *55*, pp. 165-166; *56*, p. 18, No. 50; *73*, pp. 540-543; *74*, pp. 30-31; *75*, p. 96; *79*, p. 22; *80*, pp. 21, 23, 34-35; *81*, pp. 13, 20; *85*, pp. 18-19, 38; *86*, p. 80; *95*, p. 38; *105*, pp. 17, 23; *106*, pp. 69, 71; *116*, p. 41; *117*, pp. 319, 322-323, 351, 370; *118*, pp. 1-2, 9; *120*, p. 10; *121*, pp. 15, 36, 39; *156*, p. 86; *157*, p. 65; *158*, pp. 83, 85; *184*; *231*, pp. 183-188; *244*, p. 10, No. 255; *256*, pp. 34, 36; *268*, pp. 1, 4; *295*, p. 14; *339*, p. 8; *349*, pp. 1-18; *398*, p. 22; *420*, pp. 1-16; *425*; *426*; *485*, p. 141; *490*, p. 22; *533*, p. 28; *534*, pp. 23, 28; *554*, pp. 76-77; *561*, pp. 121-127; *600*, pp. 10, 25-28, 33; *638*, pp. 53-54, 62; *658*; *748*, pp. 3-6; *750*, p. 2; *752*, pp. 1-2; *753*, p. 13; *784*, pp. 333-334, 355, 358; *806*; *823*, pp. 20, 24-26; *824*, pp. 10, 32-33, 39; *825*, pp. 13, 51-52; *826*, pp. 16, 59; *827*, pp. 17, 59, 65; *828*, pp. 15, 61-62, 67-68; *829*, pp. 66-67; *830*, pp. 63-64; *831*, p. 69; *832*, pp. 16-17, 66, 70; *833*, pp. 17-18, 70, 74; *834*, pp. 18, 80, 83-84; *835*, pp. 20-21, 85, 89; *836*, pp. 21, 83, 87; *837*, pp. 19, 77, 80; *838*, pp. 18-19, 74, 77; *851*, pp. 29, 52; *904*, p. 5; *917*; *933*, pp. 157, 159-160; *946*, pp. 5, 37; *976*, pp. 2-4; *983*, p. 194; *987*, p. 98; *990*, pp. 77, 85-86, 99; *993*, p. 79; *995*, pp. 110-111; *998*, pp. 125-126.

USGS quadrangle map ..... Craig (C-2), 15'.
USBM MAS sequence No ..... 0021190135.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A000877.
Alaska Kardex No ..... 119-001, 119-069, 119-221, 119-222.

SLATE CREEK—ASBESTOS

Alternate name: Helen Foster Discovery
Map location No.: 59

Commodity: asbestos

LOCATION-OWNERSHIP

Quadrangle	Eagle.
Mining district	Fortymile.
Elevation	1,067 m.
Topography	Rugged.
Domain	Private.
Owner	Doyon, Ltd. (Tanana Asbestos).
Reference point	Mineralized zone.
Meridian	Fairbanks.
Tract	Sec. 15, T 4 S, R 26 E.
Latitude	64°34'3" N.
Longitude	142°30'1" W.

GEOLOGY

Type of ore body	Fissure vein, shear zone.
Origin	Metamorphism.
Shape of ore body	Irregular.
Ore controls	Fracturing, lithology.
Mineral names	Chrysotile, antigorite.
Host formation	Unnamed metamorphics.
Geologic age	Paleozoic.
Deformation	Metamorphism, faulting.
Age of deformation	Mesozoic.
Rock types	Serpentinite, quartzite.

DEVELOPMENT

Current status	Explored deposit.
Type of operation	Prospect.
Year of discovery	1968.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	On-site.
Road requirement	Less than 100 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	49,887,000 mt	6.35 pct asbestos	1981	*659.*
Do	55,339,000 mt	5.00 pct asbestos. Grade ranges 5-6 pct.	1984	*295*, p. 44.

REFERENCES

64; *120*, p. 16; *121*, pp. 18, 27; *295*, p. 44, No. 59; *296*, pp. 1, 12; *331*; *659*.

USGS quadrangle map	Eagle (C-4), 15'.
USBM MAS sequence No	0020600017.
MSHA Mid No	Not available.
USGS MRDS No	A001027.
Alaska Kardex No	060-189, 060-190, 060-191, 060-222.

SNIPE BAY—NICKEL

Alternate name: Snipe 899, 900, 976, 998, 1000
Map location No.: 196

Commodities: Ni, Cu, Ag, PGM, Co

LOCATION-OWNERSHIP

Quadrangle	Port Alexander.
Mining district	Chichagof.
Elevation	145 m.
Topography	Rugged.
Domain	National forest.
Owner	Donald McDonald and David Johnson.
Reference point	Mineralized zone.
Meridian	Copper River.
Tract	Sec. 9, T 63 S, R 67 E.
Latitude	56°25'25" N.
Longitude	134°57'17" W.

GEOLOGY

Type of ore body	Disseminated, massive.
Origin	Magmatic differentiation.
Shape of ore body	Tabular, irregular.
Ore controls	Igneous, lithology.
Mineral names	Pentlandite, chalcopyrite, pyrrhotite, pyrite, magnetite, hornblende, albite.
Host formation	Unnamed igneous.
Geologic age	Pre-Jurassic.
Deformation	Metamorphism, intrusion.
Age of deformation	Pre-Jurassic.
Rock types	Gabbro, amphibolite.

DEVELOPMENT

Current status	Explored prospect.
Type of operation	Prospect.
Year of discovery	1953.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	Less than 3 km.
Road requirement	Less than 10 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	390,000 mt	0.30 pct Ni, 0.30 pct Cu	1944	*699*, p. 328.
Inferred	390,100 mt	0.30 pct Ni, 0.30 pct Cu, 4.50 g/mt Ag	1984	*295*, p. 46.

REFERENCES

74, pp. 31, 37; *115*, pp. 72, 95, 106-107, 110, 113; *117*, pp. 337, 348-351; *262*, pp. 13, 39; *295*, p. 46, No. 113; *468*, p. 12; *638*, p. 65; *699*; *748*, p. 5; *834*, p. 98; *904*, p. 7.

USGS quadrangle map	Port Alexander (B-3), 15'.
USBM MAS sequence No	0021160025.
MSHA Mid No	Not available.
USGS MRDS No	A002674.
Alaska Kardex No	116-016, 116-032.

SPIRIT MOUNTAIN—NICKEL

Alternate name: Spirit Mountain Mng. Co.
Map location No.: 120

Commodities: Ni, Cu, Co, Ag, PGM

LOCATION-OWNERSHIP

Quadrangle	Valdez.
Mining district	Nizina.
Elevation	1,189 m.
Topography	Very rugged.
Domain	National wilderness.
Owner	Valdez Mines Ltd.
Reference point	Claim.
Meridian	Copper River.
Tract	Sec. 36, T 6 S, R 6 E.
Latitude	61°18′34″ N.
Longitude	144°15′45″ W.

GEOLOGY

Type of ore body	Disseminated, massive sulfide.
Origin	Magmatic differentiation.
Shape of ore body	Lenticular, irregular.
Ore controls	Igneous, bedding.
Mineral names	Pentlandite, chalcopyrite, sphalerite, pyrite, pyrrhotite, bravoite, augite, enstatite, hornblende, olivine, anorthite, chlorite, talc, tremolite, magnetite, limonite, serpentine.
Host formation	Unnamed igneous.
Geologic age	Permian.
Deformation	Faulting.
Age of deformation	Permian.
Rock types	Peridotite, pyroxenite.

DEVELOPMENT

Current status	Explored prospect.
Type of operation	Prospect.
Year of discovery	1907.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	Less than 3 km.
Road requirement	Less than 50 km.
Distance to power supply	Do.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Not reported in reference	5,900 mt	1.32 pct Ni, 1.26 pct Cu, 0.18 pct Co. Grade determination required calculation by evaluator.	1945	*478*, pp. 55-56.
Do	15 mt	7.61 pct Ni, 1.56 pct Cu, 0.18 pct. Co. High-grade massive sulfide lens.		

REFERENCES

40, No. E-65; *47*, pp. 70-71; *55*, pp. 62, 64; *75*, p. 97; *79*, pp. 25, 43; *85*, p. 40; *243*, pp. 130-132; *244*, p. 9, No. 200; *247*; *262*, pp. 13, 39; *269*, p. 83, No. 151; *405*, pp. 2, 5-6; *427*, pp. 4-5, plates 1, 2; *450*; *478*, pp. 49-56; *522*, p. 81, No. 52; *524*, p. 19; *533*, p. 23; *589*, p. 105; *591*, pp. 52-53; *613*, pp. 103-104; *646*; *655*, pp. 2-8; *904*, p. 7.

USGS quadrangle map	Valdez (B-1), 15′.
USBM MAS sequence No	0020860104.
MSHA Mid No	Not available.
USGS MRDS No	W000322.
Alaska Kardex No	086-017, 086-149.

SUMDUM—COPPER

Alternate name: Sumdum Chief Discovery
Map location No.: 189

Commodities: Cu, Zn, Ag, Au

LOCATION-OWNERSHIP

Quadrangle ..... Sumdum.
Mining district ..... Juneau.
Elevation ..... 1,170 m.
Topography ..... Very rugged.
Domain ..... National wilderness.

Owner ..... Sumdum Development Corp.

Reference point ..... Claim.
Meridian ..... Copper River.
Tract ..... Sec. 28, T 47 S, R 74 E.
Latitude ..... 57°46'20" N.
Longitude ..... 133°26'10" W.

GEOLOGY

Type of ore body ..... Replacement, disseminated.
Origin ..... Hydrothermal.
Shape of ore body ..... Tabular, irregular, lenticular.
Ore controls ..... Faulting, folding.
Mineral names ..... Chalcopyrite, sphalerite, pyrite, pyrrhotite, hornblende, staurolite, almandite, quartz, andesine, biotite, muscovite.

Host formation ..... Unnamed metamorphics.
Geologic age ..... Pre-Permian.
Deformation ..... Metamorphism, major folding, faulting, intrusion.
Age of deformation ..... Pre-Permian.
Rock types ..... Hornfels, schist, gneiss, marble, amphibolite, lamprophyre, quartz diorite.

DEVELOPMENT

Current status ..... Explored prospect.
Type of operation ..... Prospect.

Year of discovery ..... 1958.
Discovery method ..... Ore-mineral in place.
First production year ..... Not applicable.
Last production year ..... Do.

Distance to water supply ..... On-site.
Road requirement ..... Less than 10 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	1,697,000 mt	0.57 pct Cu, 0.37 pct Zn, 10.29 g/mt Ag	1977	*71*, p. 212.
Inferred	24,229,000 mt			

REFERENCES

40, No. F-33; *47*, pp. 41-42; *55*, pp. 189-190; *56*, p. 122, Nos. 13-14; *71*; *121*; *212*; *242*, pp. 28-29; *269*, p. 84; *294*, p. 34; *295*, p. 46, No. 106; *406*, pp. 68-69; *507*; *517*; *638*, pp. 63, 65; *924*, p. 54.

USGS quadrangle map ..... Sumdum (D-5), 15'.
USBM MAS sequence No ..... 0021150003.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A003398.
Alaska Kardex No ..... 115-050.

TOFTY TIN BELT—TIN

Alternate name: Woodchopper Creek
Map location No.: 39

Commodities: Sn, Au, Nb, Ta, Ag

LOCATION-OWNERSHIP

Quadrangle ..... Tanana.
Mining district ..... Hot Springs.
Elevation ..... 183 m.
Topography ..... Rugged.
Domain ..... State.

Owner-operator ..... Jack Neubauer.

Reference point ..... Mineralized zone.
Meridian ..... Fairbanks.
Tract ..... Sec. 1, T 3 N, R 16 W.
Latitude ..... 65°5'45" N.
Longitude ..... 150°52'45" W.

GEOLOGY

Type of ore body ..... Placer.
Origin ..... Sedimentation.
Shape of ore body ..... Irregular.
Ore controls ..... Bedding.
Mineral names ..... Cassiterite, gold, quartz, tourmaline, pyrite, ilmenite, magnetite, picotite, zircon, feldspar, hypersthene, apatite, epidote, brookite, anatase, monazite, barite, garnet, sphene, diopside, augite, copper.

Host formation ..... Alluvium.
Geologic age ..... Quaternary.
Deformation ..... Not available.
Age of deformation ..... Do.
Rock types ..... Gravel, silt.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Placer.

Year of discovery ..... 1906.
Discovery method ..... Ore-mineral not in place.
First production year ..... 1911.
Last production year ..... 1982.

Distance to water supply ..... Less than 3 km.
Road requirement ..... None.
Distance to power supply ..... Less than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	1,162,000 m^3	1561.00 g/m^3 Sn, 0.57 g/m^3 Au. Indicated reserves are placers.	1961	*886*, p. 55.
Inferred	963,000 m^3	573.00 g/m^3 Sn. Inferred reserves are tailings.		

REFERENCES

40, No. B-30; *121*, p. 31; *215*; *269*, p. 81, No. 72; *295*, p. 26; *302*; *886*; *892*; *949*.

USGS quadrangle map ..... Tanana (A-2), 15'
USBM MAS sequence No ..... 0020480032.
MSHA Mid No ..... 5000299.
USGS MRDS No ..... A003583.
Alaska Kardex No 048-003, 048-007, 048-009, 048-010, 048-013, 048-019, 048-038, 048-039, 048-071, 048-073, 048-074, 048-075, 048-076, 048-077, 048-078, 048-079, 048-127, 048-133

TOZIMORAN CREEK—GOLD

Alternate name: Moraine Creek
Map location No.: 37

Commodities: Au, Sn

LOCATION-OWNERSHIP

Quadrangle ..... Tanana.
Mining district ..... Melozitna.
Elevation ..... 274 m.
Topography ..... Rugged.
Domain ..... State.

Reference point ..... Claim.
Meridian ..... Fairbanks.
Tract ..... Sec. 1, T 6 N, R 26 W.
Latitude ..... 65°22′45″ N.
Longitude ..... 152°48′2″ W.

Owner-operator ..... I. W. Purkeypile and David Purkey.

GEOLOGY

Type of ore body ..... Placer.
Origin ..... Sedimentation.
Shape of ore body ..... Tabular, irregular.
Ore controls ..... Bedding.
Mineral names ..... Gold, cassiterite, magnetite, limonite, quartz.

Host formation ..... Alluvium.
Geologic age ..... Quaternary.
Deformation ..... Not available.
Age of deformation ..... Do.
Rock types ..... Gravel, silt.

DEVELOPMENT

Current status ..... Past producer.
Type of operation ..... Placer.

Year of discovery ..... 1902.
Discovery method ..... Ore-mineral not in place.
First production year ..... 1902.
Last production year ..... 1957.

Distance to water supply ..... On-site.
Road requirement ..... Less than 50 km.
Distance to power supply ..... More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	6,800 m^3	0.93 g/m^3 Au, 332.00 g/m^3 Sn	1945	*919*, p. 15.
Inferred	6,800 m^3			

REFERENCES

40, No. B-29; *55*, p. 236; *93*, p. 46; *120*, p. 24; *162*, pp. 14-20, 22, 24-32; *213*; *215*; *216*, p. 91; *295*, p. 26; *302*; *827*, p. 40; *828*, pp. 42, 70; *829*, p. 41; *832*, p. 45; *833*, p. 47; *888*; *919*; *953*, p. 35; *955*, p. 97.

USGS quadrangle map ..... Tanana (B-6), 15′.
USBM MAS sequence No ..... 0020480011.
MSHA Mid No ..... Not available.
USGS MRDS No ..... A003586.
Alaska Kardex No ..... 048-055.

TRACY GROUP—ZINC

Alternate name: Tracy 1-24
Map location No.: 187

Commodities: Zn, Cu, Pb, Ag, Au

LOCATION-OWNERSHIP

Quadrangle	Sumdum.
Mining district	Juneau.
Elevation	303 m.
Topography	Very rugged.
Domain	National wilderness.
Owner-operator	Ray Renshaw and Associates.
Reference point	Mineralized zone.
Meridian	Copper River.
Tract	Sec. 10, T 46 S, R 73 E.
Latitude	57°54′0″ N.
Longitude	133°33′50″ W.

GEOLOGY

Type of ore body	Shear zone, fissure vein, replacement.
Origin	Metasomatic, hydrothermal.
Shape of ore body	Tabular.
Ore controls	Contact zone, igneous.
Mineral names	Sphalerite, chalcopyrite, galena, pyrite, marcasite, pyrrhotite, magnetite.
Host formation	Unnamed metamorphics.
Geologic age	Triassic.
Deformation	Metamorphism, major folding, faulting, intrusion.
Age of deformation	Mesozoic.
Rock types	Schist, phyllite, quartz diorite.

DEVELOPMENT

Current status	Explored prospect.
Type of operation	Prospect.
Year of discovery	1916.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	On-site.
Road requirement	Less than 10 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	6,350 mt	4.10 pct Zn, 1.50 pct Cu, 34.30 g/mt Ag, 0.34 g/mt Au.	1946	*350*, p. 10.
Inferred	127,000 mt			

REFERENCES

40, No. F-32; *56*, p. 121, No. 9; *71*, pp. 4, 114, 128-129, 200-203; *115*, pp. 130-131; *117*, pp. 69-70; *158*, p. 99; *212*; *242*, pp. 34, 35; *350*, pp. 41-42; *406*, pp. 68-74; *549*; *904*, p. 6; *910*.

USGS quadrangle map	Sumdum (D-5), 15′.
USBM MAS sequence No	0021150002.
MSHA Mid No	Not available.
USGS MRDS No	Do.
Alaska Kardex No	115-057B, 115-057C, 115-065, 115-067.

UNION BAY—CHROMIUM

Alternate name: Doris Group
Map location No.: 223

Commodities: Cr, Fe, PGM, V

LOCATION-OWNERSHIP

Quadrangle	Craig.	Reference point	Mineralized zone.
Mining district	Ketchikan.	Meridian	Copper River.
Elevation	579 m.	Tract	Sec. 25, T 70 S, R 86 E.
Topography	Rugged.	Latitude	55°46'36" N.
Domain	National forest.	Longitude	132°9'0" W.
Owner-operator	U.S. Steel.		

GEOLOGY

Type of ore body	Massive, disseminated.	Host formation	Unnamed ultramafics.
Origin	Magmatic differentiation.	Geologic age	Mesozoic.
Shape of ore body	Lenticular, irregular.	Deformation	Intrusion, faulting.
Ore controls	Fracturing, igneous.	Age of deformation	Mesozoic.
Mineral names	Chromite, magnetite, serpentine, augite, olivine.	Rock types	Dunite, pyroxenite.

DEVELOPMENT

Current status	Explored prospect.	Distance to water supply	Less than 3 km.
Type of operation	Prospect.	Road requirement	Less than 10 km.
		Distance to power supply	Less than 100 km.
Year of discovery	Not available.		
Discovery method	Do.		
First production year	Not applicable.		
Last production year	Do.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	23 mt	27.01 pct Cr_2O_3, 37.37 pct FeO. Reserve figure consists of locality B only.	1946	*471*, p. 83.

REFERENCES

40, No. F-61; *55*, p. 183; *56*, p. 35, No. 167; *73*, pp. 540, 542-545; *117*, pp. 351-352; *184*; *231*, pp. 212-213; *244*, p. 10, No. 256; *246*, p. 81; *256*, pp. 10, 35-36; *322*, p. 5; *415*; *468*, p. 11; *471*, pp. 80-83; *638*, p. 6; *771*; *904*, p. 11; *933*, pp. 159-160; *942*, pp. 227-231; *987*, p. 102.

USGS quadrangle map	Craig (D-1), 15'.
USBM MAS sequence No	0021190112.
MSHA Mid No	5000050.
USGS MRDS No	A000903.
Alaska Kardex No	119-005, 119-017, 119-021, 119-210, 119-213, 119-271.

VALDEZ CREEK—GOLD

Alternate name: Tammany Channel
Map location No.: 74

Commodities: Au, Ag

LOCATION-OWNERSHIP

Quadrangle ..... Healy.
Mining district ..... Valdez Creek.
Elevation ..... 790 m.
Topography ..... Hilly.
Domain ..... BLM-administered.

Owner-operator ..... Valdez Creek Joint Venture.

Reference point ..... Mineralized zone.
Meridian ..... Fairbanks.
Tract ..... Sec. 13, T 20 S, R 1 E.
Latitude ..... 63°10′45″ N.
Longitude ..... 147°27′50″ W.

GEOLOGY

Type of ore body ..... Placer.
Origin ..... Sedimentation.
Shape of ore body ..... Irregular.
Ore controls ..... Bedding.
Mineral names ..... Gold, chromite, magnetite, serpentine, augite, olivine.

Host formation ..... Alluvium.
Geologic age ..... Quaternary.
Deformation ..... Not available.
Age of deformation ..... Do.
Rock types ..... Gravel.

DEVELOPMENT

Current status ..... Producer.
Type of operation ..... Placer.

Year of discovery ..... 1903.
Discovery method ..... Ore-mineral not in place.
First production year ..... 1903.
Last production year ..... Not available.

Distance to water supply ..... On-site.
Road requirement ..... None.
Distance to power supply ..... On-site.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Measured	357,000 m^3	4.27 g/m^3 Au, 0.73 g/m^3 Ag	1984	*295*, p. 26.

REFERENCES

40, No. E-21; *76*, p. 67; *77*, p. 49; *78*, p. 56; *79*, p. 49; *80*, p. 39; *93*, pp. 37-38; *94*, p. 52; *95*, pp. 42-43; *98*, p. 44; *105*, p. 32; *106*, p. 78; *107*, pp. 167-169; *120*, pp. 12, 17, 26; *130*, p. 137; *146*, p. 36; *166*; *215*; *216*, pp. 11-12; *295*, pp. 12, 17, 26; *469*, pp. 1, 5; *490*, p. 12; *522*; *533*, p. 22; *551*, pp. 117-118; *596*, pp. 53-54, 56-62; *604*, pp. 159-160; *607*; *615*, pp. 119-121; *766*, pp. 427-428, 437, 444-453; *824*, p. 18; *825*, p. 23; *826*, p. 26; *827*, p. 31; *828*, p. 29; *829*, pp. 29-30; *830*, p. 28; *831*, p. 32; *832*, p. 34; *833*, p. 37; *835*, p. 42; *836*, p. 40; *837*, p. 36; *838*, p. 36; *852*, pp. 42-43; *901*, pp. 122-127; *931*.

USGS quadrangle map ..... Healy (A-1), 15′.
USBM MAS sequence No ..... 0020670007.
MSHA Mid No ..... 5001107.
USGS MRDS No ..... A001335.
Alaska Kardex No ..... 067-004, 067-005, 067-009, 067-012, 067-015, 067-016, 067-019, 067-024, 067-025, 067-029, 067-031, 067-034, 067-035, 067-037, 067-043, 067-112, 067-133, 067-135, 067-139, 067-169, 067-170, 067-185, 067-187, 067-217, 067-220, 067-243, 067-244, 067-248, 067-257, 067-259, 067-260, 067-294.

WACHUSETT INLET—MOLYBDENUM

Alternate name: Not available
Map location No.: 162

Commodities: Mo, Cu, Ag

LOCATION-OWNERSHIP

Quadrangle	Mount Fairweather.
Mining district	Juneau.
Elevation	30 m.
Topography	Very rugged.
Domain	National wilderness.
Owner	U.S. Park Service.
Reference point	Mineralized zone.
Meridian	Copper River.
Tract	Sec. 2, T 34 S, R 54 E.
Latitude	58°57'16" N.
Longitude	136°21'11" W.

GEOLOGY

Type of ore body	Fissure vein.
Origin	Hydrothermal.
Shape of ore body	Tabular.
Ore controls	Fracturing.
Mineral names	Molybdenite, chalcopyrite, sphalerite, chlorite, epidote, goethite, gold, hornblende, orthoclase, magnetite, albite, pyrite, pyrrhotite, quartz, biotite, zircon.
Host formation	Unnamed igneous.
Geologic age	Cretaceous.
Deformation	Faulting, metamorphism, intrusion.
Age of deformation	Cretaceous.
Rock types	Granite, quartz diorite, andesite, pegmatite.

DEVELOPMENT

Current status	Raw prospect.
Type of operation	Prospect.
Year of discovery	1966.
Discovery method	Ore-mineral in place.
First production year	Not applicable.
Last production year	Do.
Distance to water supply	Less than 3 km.
Road requirement	Less than 10 km.
Distance to power supply	More than 100 km.

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Inferred	726 mt	0.01 pct Mo, 0.44 pct, Cu, 1.17 g/mt Ag	1978	*72*, p. C307.

REFERENCES

72, pp. C307-C309, plates 1A, 1B, 2; *198*; *236*, p. 67; *519*, pp. 53, 78.

USGS quadrangle map	Mount Fairweather (D-2), 15'.
USBM MAS sequence No	0021110047.
MSHA Mid No	Not available.
USGS MRDS No	A002122.
Alaska Kardex No	Not available.

YAKOBI ISLAND—COPPER

Alternate name: Bohemia Basin
Map location No.: 178

Commodities: Cu, Ni, Co

LOCATION-OWNERSHIP

Quadrangle	Sitka.	Reference point	Claim.
Mining district	Chichagof.	Meridian	Copper River.
Elevation	275 m.	Tract	Sec. 12, T 45 S, R 55 E.
Topography	Rugged.	Latitude	57°58′40″ N.
Domain	National forest.	Longitude	136°25′25″ W.
Owner-operator	Galactic Resources Ltd.		

GEOLOGY

Type of ore body	Disseminated, massive sulfide.	Host formation	Unnamed diorite group.
Origin	Magmatic differentiation.	Geologic age	Mesozoic.
Shape of ore body	Massive, tabular.	Deformation	Intrusion, metamorphism.
Ore controls	Igneous.	Age of deformation	Mesozoic.
Mineral names	Chalcopyrite, pentlandite, pyrrhotite, magnetite.	Rock types	Gabbro, norite, diorite, quartz diorite.

DEVELOPMENT

Current status	Explored deposit.	Distance to water supply	Less than 3 km.
Type of operation	Prospect.	Road requirement	Less than 10 km.
Year of discovery	1921.	Distance to power supply	More than 100 km.
Discovery method	Ore-mineral in place.		
First production year	Not applicable.		
Last production year	Do.		

PUBLISHED RESERVES-RESOURCES

Class	*Quantity*	*Grade*	*Year*	*Reference*
Indicated	21,860,000 mt	0.18 pct Cu, 0.31 pct Ni, 0.04 pct. Co.	1978	*435*, pp. 1-2.
Not reported in reference	19,958,000 mt	0.21 pct Cu, 0.33 pct Ni, 0.04 pct Co. Cu grade ranges 0.21-0.27 pct, Ni 0.33-0.51 pct.	1984	*295*, p. 46, No. 103

REFERENCES

40, No. F-19; *49*; *55*, pp. 143-144; *56*, p. 98, No. 2-3; *112*; *115*, pp. 95, 98-105, 113; *117*, pp. 348-351, 373, 389; *120*, p. 10; *121*, pp. 15, 26, 39, 43; *208*; *240*, pp. 20-21; *244*, p. 10, No. 241; *262*, pp. 13, 36-37; *269*, p. 84, No. 219; *295*, pp. 14, 46, No. 103; *296*, pp. 8, 15; *298*; *347*; *419*; *472*, pp. 42-43, 45-56; *503*, p. 91; *638*, p. 65; *652*; *698*, pp. 118-125, 127-130, 132-138; *722*; *729*, p. 1; *748*, p. 2; *804*, p. 7; *836*, p. 104; *864*; *904*, p. 7.

USGS quadrangle map	Sitka (D-8), 15′.
USBM MAS sequence No	0021140017.
MSHA Mid No	Not available.
USGS MRDS No	A003149.
Alaska Kardex No	114-003, 114-014, 114-020, 114-124A, 114-153A.

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APPENDIX.—ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
ABO	23	Pb, Zn, Ag, Cu.	0020300094	*40*, No. B-12; *121*; *269*, p. 79, No. 22; *295*, p. 42, No. 15.
Alamo	233	Cu, Zn, Ag, Au.	0021200085	*40*, No. F-53; *56*.
Alaska Juneau	171	Au, Ag, Pb, Zn.	0021120147	*36*; *40*, No. F-26; *47*, pp. 14-20, 34; *53*, pp. 62-63, 72-73; *55*, pp. 154-155; *56*; *67*; *68*; *69*; *70*; *74*, pp. 14-15, 37; *76*, p. 59; *77*, p. 41; *80*, pp. 14, 36; *81*, p. 21; *97*, p. 25; *98*, p. 32; *105*, pp. 8, 24; *120*, p. 12; *121*, p. 5; *158*, pp. 73, 75; *169*; *189*; *216*, p. 57; *246*, p. 140; *267*; *269*, p. 84, No. 220; 282, pp. 80-81; *285*, pp. 98, 100; *295*, p. 14; *318; 371; 372; 406*, pp. 19-20; *468*, p. 7; *485*, p. 135; *486*, p. 96; *490*, pp. 19-21; *533*, p. 29; *534*, p. 29; *561*, pp. 106-107; *583; 586; 600*, pp. 9, 29-30; *638*, pp. 54, 60; *660*, p. 137; *675*, pp. 2-3; *823*, pp. 6-7, 22; *824*, pp. 9-10, 38-39; *825*, pp. 10-12, 48, 51, 63; *826*, pp. 12-13, 55, 58; *827*, pp. 13-15, 61, 64; *828*, pp. 12-14, 63, 66-67; *829*, pp. 13-14, 62, 65; *830*, pp. 12-14, 58, 61; *831*, pp. 13-14, 63, 66; *832, pp. 13-15, 61, 68; 833*, pp. 13-16, 64, 71-72; *834*, pp. 14-16, 74, 81; *835*, pp. 16-18, 79, 86-87; *836*, pp. 17-19, 78, 89; *837*, pp. 16-18, 72, 81-82; *838*, pp. 15-17, 69, 78-79; *839*, pp. 8-9, 14-15; *851*, pp. 32-33, 52; *852*, pp. 18-19; *863*, pp. 58, 69-73; *891* p. 33; *903; 911*, pp. 6-7; *922*, p. 29-30, 35; *947*, pp. 268-279; *962*, p. 53; *983*, p. 197; *987*, p. 125; *991*, p. 55; *992*, pp. 87-88; *993*, p. 70; *996*, p. 53; *999*, p. 37.
Alaska Oracle	132	Au, Ag, Pb.	0020950191	*40*, No. E-76; *522; 828*, p. 20; *831*, p. 22; *832*, p. 23; *833*, pp. 26-27; *835*, p. 29; *837*, p. 25; *843*, p. 186; *900*, pp. 507-510.
Ambler Shungnak Ridge	14	Cu	0020280045	*40*, No. A-21; *121*, p. 10; *269*, p. 79, No. 13; *295*, p. 6; *366*.
Amok	174	Au	0021310040	*40*, No. D-78; *55*, p. 83; *76*, p. 64; *135*, p. 175; *192; 521; 537*, pp. 132-133; *824*, p. 12.
Ann Group	22	Pb, Zn, Ag, Cu.	0020300106	*40*, No. B-11; *269*, p. 79, No. 22; *295*, p. 42, No. 15; *366*.
Apex El Nido	179	Au, Ag, W.	0021140008	*40*, No. F-20; *55*, p. 142; *56; 74*, pp. 12, 31; *80*, pp. 37-38; *81*, p. 22; *105*, p. 25; *115*, pp. 114-121; *116*, p. 41; *117*, pp. 317-319, 330-331, 346, 372, 378; *208; 269*, p. 84, No. 222; *295*, p. 14; *468*, p. 13; *503*, p. 91, plate 1; *600*, p. 10; *638*, pp. 53-54, 61, 63; *695*, pp. 76-78; *697*, pp. 143-145; *742*, p. 1; *748*, p. 3; *768*, pp. 143, 200-204; *823*, p. 7; *824*, p. 10; *825*, p. 12; *826*, p. 14; *827*, p. 16; *828*, p. 14; *830*, p. 15; *831*, p. 15; *832*, p. 15; *833*, p. 16; *834*, p. 17; *835*, p. 19; *836*, p. 20; *837*, p. 19; *893*, pp. 5, 48-51; *905*, pp. 20-23; *977; 983*, p. 199.
Arrigetch Peaks	20	Cu, Zn, W.	0020290024	*40*, No. B-10; *270*; *366*.
B C	86	Au	0020690020	*40*, No. E-45; *522*.
Battle	143	Cu, Au, Ag.	0021030028	*40*, No. D-70; *55*, p. 14; *272; 302*.
Baumann and Strickler	176	Au, Ag	0021310023	*40*, No. D-76; *55*, p. 83; *135*, p. 177; *136*, pp. 132-133; *191; 521*.
Beauty Bay	153	Au, Ag, Cu, Pb, Zn.	0021040014	*207; 269*, p. 83, No. 165; *702*, pp. 6, 13.
Bernard Mountain	119	Cr, Ni, PGM.	0020860001	*40*, No. E-64; *55*, pp. 49, 52; *243*, p. 14; *244*, p. 9, No. 197; *247; 444*, pp. 2, 4; *522*, p. 81, No. 42; *524*, p. 19; *630*, p. 18.
Big Creek	84	Pb, Zn, Ag.	0020690008	*40*, No. E-43; *295*, p. 44, No. 58; *302*.
Blue Lead	58	Au, Cu, Sb, Ag.	0020590022	40, No. B-51, *55*, p. 222; *178; 302; 452*, p. 1; *684; 834*, pp. 22-23; *836*, p. 30.
Bluff	83	Cu, Mo	0020690045	*40*, No. E-41; *302*.
Bonanza	28	W	0020390051	*40*, No. B-24.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
Bonanza (Kennecott)	123	Cu, Ag	0020870010	*40*, No. E-69; *47*, pp. 32-33; *55*, pp. 52-53, 56; *74*, pp. 28, 37; *76*, pp. 60-61; *77*, p. 44; *78*, p. 54; *79*, pp. 16, 43; *80*, pp. 19, 21, 38-39; *81*, pp. 13, 23; *85*, pp. 12-13, 25, 27-28; *86*, pp. 84-86; *92*, p. 28; *95*, p. 34; *96*, pp. 27-28; *105*, pp. 15, 26-27; *106*, p. 69; *121*, pp. 11, 31, 36, 37; 269, p. 83, No. 149; *345*, pp. 25, 205-206, 209-211, 275; *512; 514*, pp. 32-34; *520; 525*, p. 2; *533*, pp. 17-18, 30; *534*, pp. 30-31; *551*, pp. 92, 103-104; *552*, pp. 16-18, 27-28; *574*, pp. 98-101; *587*, pp. 105-106; *589*, pp. 118-122, 125, 129, 131; *598*, pp. 62-65, 68, 70-72; *599*, pp. 104-105, 114-115; *600*, pp. 27-28; *601*, pp. 82, 84; *602*, pp. 194-195; *604*, pp. 153-154; *605*, pp. 163-175; *611*, p. 98; *616*, pp. 76, 83-93; *619*, p. 160; *620*, pp. 161-165; *621*, pp. 80-88; *801*, p. 86; *823*, p. 20; 824, pp. 32, 34-35; *825*, pp. 45-46, 48; *826*, pp. 52-53; *827*, pp. 58-59; *828*, pp. 60-61; *829*, pp. 59-60; *830*, pp. 56-57; *831*, p. 59; *832*, p. 67; *833*, pp. 69-70; *834*, pp. 78-80; 835, pp. 84-85; *836*, pp. 85-87; *851*, pp. 37-38, 52; *852*, pp. 30-32; *904*, p. 5; *921*, pp. 144-145; *927*, pp. 8, 104; *928*, pp. 165-166, 168; *929*, pp. 61-62; *955*, p. 107.
Bowser Creek	93	Ag, Cu, Au, Pb, Zn.	0020740020	*40*, No. D-26; *196*; *224*, p. 69; *269*, p. 82, No. 117; *521; 679*, pp. 2-4; *680*.
Burroughs Bay	229	Mo	0021200163	*40*, No. F-50; *56*.
Cache Mountain	44	U	0020490148	*269*, p. 81, No. 76.
Cantu	209	Pb, Zn, Ag, Au, Cu.	0021180011	*40*, No. F-51; *55*, p. 147; *56*; *113*, pp. 43, 91-92; *117*, p. 324; *126*, p. 140; *179; 336*, pp. 9, 25; *337*, p. 2; *600*, p. 30; *748*, p. 12; *805*, p. 2; *827*, p. 17; *831*, p. 16; *834*, p. 19; *962*, p. 30.
Caribou Mountain	27	Cr, Co	0020390058	*40*, No. B-23; *326*.
Carlson Creek	66	Cu, Pb, Zn.	0020660051	*40*, No. E-6; *55; 200; 522; 597*, pp. 322-323.
Castle Island Mine	201	Ba, Zn, Ag, Au, Cu.	0021170002	*40*, No. F-43; *55; 56*.
Cathedral Creek	192	Cu, Au, Ag, Pb, Mn, Zn.	0021330002	*40*, No. D-83; *121; 521; 682*.
Chalet Mountain	177	W	0021310016	*40*, No. D-77; *55*, p. 87; *192; 445; 522; 763*, pp. 4-5, 9; *920*.
Chenik	145	Fe, Ti, Cu, Au, Ag, Zn, Pb.	0021030012	*40*, No. D-69; *55*, p. 14; *272*.
Chichagoff	182	Au, Ag, Pb.	0021140023	*40*, No. F-22; *55*, pp. 141-142; *56; 74*, pp. 11-12, 15, 37; *76*, p. 60; *77*, p. 43; *79*, p. 41; *80*, p. 37; *81*, p. 22; *97*, p. 24; *98*, p. 34; *105*, p. 25; *106*, p. 76; *116*, p. 41; *117*, pp. 317, 319, 343, 372; *120*, p. 12; *158*, p. 78; *208; 269*, p. 84, No. 222; *295*, p. 13; *296*, p. 9; *468*, p. 7; *485*, p. 139; *486*, p. 98; *488*, pp. 18, 22-25, fig. 1; *490*, p. 20; *533*, p. 30; *534*, p. 30; *600*, p. 10; *638*, pp. 54, 61; *644*, pp. 110-111, 113-116, 119; *697*, pp. 86-101; *728*, p. 16; *742*, p. 4; *768*, p. 143; *813*, p. 3; *823*, p. 7; *824, p. 10; 825*, pp. 12, 46; *826*, p. 14; *828*, p. 14; *829*, p. 15; *830*, p. 14; *831*, pp. 14-15; 832, p. 15; *833*, pp. 16, 72; *834*, p. 16; *835*, p. 18; *836*, p. 20; *837*, pp. 18-19; *838*, p. 18; *851*, pp. 36, 52; *852*, p. 29; *875*, p. 2; *962*, pp. 49-50; *983*, p. 199; *991*, p. 61; *992*, p. 91; *993*, p. 73.
Chill Group	111	Cu, Pb, Ag.	0020830009	*40*, No. D-38; *194; 521; 681*, p. 21.
Chip Loy	90	Ni, Cu, Co.	0020740016	*40*, No. D-22; *196; 224*, pp. 72, 86; *400*, pp. 1, 8; *522*.
Cinnabar	126	Hg, Sb	0020920002	*40*, No. D-34; *55*, pp. 92, 93; *121; 127*, p. 115; *213; 269*, p. 83, No. 183; *302; 528*, pp. 39, 53; *529*, pp. 39, 41, 43; *776*, pp. 4, 8; *788*, pp. 3, 35-40, 80-81; *932*, pp. 52-53; *936*, pp. 16, 18-20; *950*, pp. 44-46.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
Cleary Hill	42	Au, Ag, Sb, Pb, Cu, Sn, W, Zn.	0020490039	*55*, p. 220; *78*, p. 60; *81*, p. 30; *82*, pp. 34-35; *96*, pp. 33-35; *97*, p. 31; *121*, p. 16; *124*, p. 15; *125*, pp. 180, 206, 208-209; *155*, pp. 337-338; *159*, p. 322; *163*, p. 10; *195*; *284*, pp. 236-237; *295*, p. 9; *410*, pp. 30, 49, 52, 62, 69-71, 75, 84, 93-96; *453*, p. 8; *454*, p. 9; *475*, pp. 29-31; *560*, p. 411; *600*, p. 12; *663*, p. 225; *821*, pp. 177-182; *822*, pp. 163-168; *823*, p. 9; *824*, p. 13; *825*, p. 15; *826*, p. 17; *827*, p. 20; *828*, p. 19; *829*, p. 19; *830*, p. 17; *831*, pp. 19-20; *832*, p. 20; *833*, p. 20; *834*, p. 21; *835*, p. 23; *836*, p. 25; *837*, pp. 22-23; *838*, pp. 22-23; *851*, pp. 23-24, 53; *954*, p. 2.
Cleary Summit	42	Au, Sb, Pb, Ag, W.	0020490035	*155*, p. 340; *159*, p. 322; *163*, pp. 11, 12; *195*; *284*, p. 238; *295*, p. 9; *410*, pp. 90-91; *663*, p. 225; *821*, pp. 182-183, 185-186; *822*, pp. 169, 171-172.
Cliff	116	Au, Pb, Zn, Cu.	0020860037	*40*, No. E-79; *55*, p. 72; *76*, p. 63; *77*, p. 45; *80*, pp. 14, 40; *86*, p. 62; *87*, pp. 108, 112, 116-118, 121-123; *96*, pp. 29-31; *97*, p. 27; *98*, p. 35; *120*, p. 12; *247*; *263*, p. 30; *296*, p. 22; *359*, p. 165; *363*, pp. 72-74, 76-77; *456*, pp. 152-156, 170-172, plate 8; *460*, p. 237; *462*, pp. 143-144; *463*, pp. 190-191; *464*, pp. 149-150; *490*, pp. 31-32; *522*; *534*, p. 33; *589*, p. 127; *593*, pp. 304-306; *723*; *823*, p. 8; *824*, p. 11; *831*, pp. 23-24; *833*, p. 23; *834*, p. 24; *835*, pp. 26-27; *836*, p. 27; *837*, p. 26; *838*, p. 26; *844*, p. 197; *851*, pp. 39, 52; *852*, p. 44.
Clipper	56	Sb, Au ..	0020580014	*55*, p. 219; *78*, p. 61; *82*, pp. 38-39; *155*, pp. 354-355; *163*, p. 17; *173*; *295*, p. 9; *301*, p. 38; *410*, p. 152; *453*, p. 8; *475*, pp. 12, 14-15, 41, 43; *600*, p. 12; *821*, p. 209; *822*, p. 194; *823*, pp. 8-9; *826*, p. 17.
Coal Creek Tin	95	Sn, Cu, Ag, Zn.	0020760063	*10*; *40*, No. E-12; *120*, p. 10; *269*, p. 83, No. 123; *295*, p. 12; *897*.
Cobol Mine	181	Au.....	0021140025	*40*, No. F-23; *55*, p. 143; *56*; *105*, p. 25; *115*, pp. 72, 114, 121-123; *117*, pp. 346, 378; *121*, p. 17; *208*; *638*, p. 54; *697*, pp. 142-143; *731*; *768*, pp. 143, 209-210, 213; *824*, p. 10; *825*, p. 12; *905*, p. 23.
Colorado	125	Cu, Au, Ag.	0020870096	*40*, No. E-57; *55*, pp. 205, 208; *128*, pp. 90, 118; *138*, p. 224; *480*, p. 16; *512*; *520*; *522*; *618*, p. 177; *619*, p. 59; *948*, pp. 163-164.
Copper Mountain	220	Cu, Au, Ag.	0021190057	*55*, pp. 171-172; *77*, p. 41; *85*, p. 17; *98*, p. 33; *100*, pp. 105-107; *118*, p. 21; *121*, p. 11; *158*, p. 91; *184*; *256*, pp. 34-35; *269*, p. 84, No. 238; *398*, p. 10; *468*, p. 11; *748*, p. 10; *758*, p. 12; *820*, p. 84; *990*, pp. 50, 55-58; *991*, p. 70; *992*, p. 94; *993*, p. 82; *996*, p. 64; *998*, pp. 96-98; *999*, pp. 51-52; *1000*, p. 2.
Cornwallis Peninsula	198	Pb, Zn, Ag, Cu.	0021160058	*40*, No. F-39.
Coronation Island	214	Pb, Zn, Sb.	0021190037	*34*, pp. 1-2; *40*, No. F-47; *55*, pp. 188-189; *56*; *158*, pp. 98-99; *184*; *231*; *250*, p. 23; *256*, pp. 35-36; *424*, p. 24; *735*, pp. 20-21; *748*, pp. 7, 10-11; *753*, pp. 16-17; *905*, pp. 38-40; *952*, p. 11; *955*, p. 67; *987*, p. 81; *998*, pp. 190-191.
Cross Creek	104	Cu, Pb, Ag, Zn.	0020780028	*40*, No. E-52; *55*, p. 209; *128*, p. 121; *522*; *590*, p. 210; *618*, p. 173; *619*, p. 55; *708*; *713*; *715*; *948*, p. 174.
Crown Point	134	Au, Ag, Pb, Cu, Zn.	0020950114	*40*, No. E-77; *76*, p. 63; *78*, p. 56; *79*, p. 45; *96*, p. 32; *98*, pp. 37-38; *361*, p. 107; *362*, p. 173; *457*, pp. 138, 142, 147-150, 160; *459*, p. 175; *522*; *540*, pp. 157-163; *833*, p. 26; *834*, pp. 32-33; *835*, p. 29; *851*, pp. 43, 50; *852*, p. 35.
Dawson	217	Au, Ag, Cu, Pb, Zn.	0021190064	*40*, No. F-57; *55*, p. 169; *56*; *74*, p. 15; *76*, p. 60; *77*, p. 42; *80*, p. 35; *81*, p. 20; *97*, p. 26; *105*, p. 23; *116*, p. 41; *117*, pp. 321, 371; *118*, pp. 10-11, 14-16; *121*; *156*, p. 88; *157*, p. 65; *158*, pp. 80-81; *184*; *231*, pp. 26, 31, 55-57, 72, 85; *246*, pp. 66, 68, 71-73; *256*, p. 34; *336*, pp. 1, 25; *337*, p. 1; *339*, pp. 7-8; *407*, pp. 1-29; *485*, p. 139; *486*, p. 98; *533*, p. 28; *534*, p. 28; *561*, pp. 127-128; *600*, p. 10; *725*; *730*, p. 5; *743*, pp. 7-8; *750*, p. 4; *751*; *752*, pp. 2-3; *753*, pp. 12, 14; *806*; *820*, pp. 78-79; *823*, p. 7; *824*, p. 10; *825*, pp. 13, 51; *826*, pp. 15-16; *827*, p. 18; *828*, p. 15; *829*, p. 16; *837*, pp. 19-20; *851*, pp. 29, 52; *975*; *983*, p. 194; *987*, pp. 78-79, 82, 87, 88; *991*, p. 62; *992*, p.92; *993*, p. 79; *996*, p. 67; *998*, pp. 161-162.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
Dead Creek	16	Cu, Zn, Pb, Ag.	0020280048	*40*, No. A-22; *121*, p. 10; *295*, p. 6; *366*.
Decourcy	88	Hg, Sb	0020730019	*40*, No. D-14; *47*, pp. 63-64; *55*, p. 226; *61*; *74*, pp. 31, 47; *80*, pp. 24, 57; *81*, p. 13; *127*, pp. 2, 105, 108, 111-113; *188*; *215*; p. 146; *216*, p. 79; *232*, pp. 10-12; *302*; *423*; *453*, pp. 24-26; *454*, p. 17; *528*, pp. 31-33, 46-49, 54; *529*, pp. 2-3, 8, 11, 45-50; *564*, p. 243; *653*, pp. 12, 52, 85; *788*, pp. 2-3, 43-46; *823*, pp. 25-26; *838*, p. 91; *950*, pp. 3, 9, 29-43.
Difficult Creek	131	Au, Ag, Pb.	0020940033	*32*; *295*, p. 12; *902*, pp. 7, 8.
Drenchwater Creek	4	Pb, Zn	0020200002	*40*, No. A-10; *269*, p. 78, No. 5; *438*, pp. 30-46; *639*.
Driest Point	231	Ba, Pb, Zn.	0021200038	*40*, No. F-69; *54*; *56*.
Dundas Bay Copper	164	Cu, Mo	0021110065	*40*, No. F-11; *56*; *72*; *198*; *519*, pp. 30, 36, 40, 48, 79.
Duryea	146	Au, Ag, Pb, Zn.	0021030039	*40*, No. D-62; *47*, p. 33; *55*, pp. 14-15; *76*, p. 64; *77*, p. 47; *81*, p. 27; *98*, pp. 38-39; *105*, p. 33; *141*, pp. 93-94; *272*; *521*; *541*, pp. 124-125; *542*, pp. 196-197; *625*, pp. 3-4; *955*, pp. 75-76.
Dutton	148	Cu, Au, Mo, Fe.	0021030027	*40*, No. D-66; *55*, p. 14; *521*.
Eagle River	168	Au, Ag, Cu, Zn, Pb.	0021120084	*40*, No. F-17; *55*, p. 158; *56*; *76*, p. 59; *77*, p. 41; *97*, p. 26; *98*, p. 32; *121*; *158*, pp. 76-77; *189*; *246*, p. 134; *282*, p. 77; *285*, p. 101; *482*; *485*, p. 138; *486*, p. 97; *534*, p. 30; *675*, p. 10; *731*, pp. 9-10; *748*; *756*; *831*, p. 17; *851*, pp. 35, 52; *852*, p. 23; *863*, pp. 130-131; *885*; *987*, p. 119; *991*, p. 57; *992*, p. 89; *993*, pp. 70-71; *996*, p. 54; *999*, p. 35.
Eagle Summit	47	Sb	0020500285	*295*, p. 26.
Ellamar	138	Cu, Au, Ag, Pb, Zn.	0020960001	*40*, No. E-81; *47*, p. 33; *55*, p. 69; *76*, p. 62; *77*, p. 45; *79*, p. 44; *80*, p. 20; *85*, p. 22; *86*, p. 81; *92*, p. 27; *95*, pp. 32, 39; *96*, pp. 31-32; *97*, p. 27; *106*, pp. 69, 77; *144*, pp. 13-14, 51-55, 57-64, 71-72, 87-92; *145*; *183*; *257*; *358*, pp. 82, 87; *359*, p. 164; *360*, pp. 87-88, 94-95; *363*, pp. 52-53, 56-57, 59-61, 78; *460*, pp. 240-241; *461*, pp. 131, 133; *462*, pp. 138, 140; *463*, pp. 184-186; *464*, pp. 144, 147; *490*, p. 32; *522*; *533*, p. 31; *534*, p. 35; *593*, pp. 228, 296-298, 302; *609*, p. 178; *617*, pp. 55-56; *801*, p. 89; *851*, pp. 39, 52; *852*, pp. 44-45.
Emerick Lode	79	Ni, Cu, Au, PGM, Ag, Pb.	0020680052	*40*, No. E-28; *55*, pp. 211-212; *199*; *235*, p. 28; *244*, p. 7, No. 153; *374*, pp. 67-74; *522*, p. 38, No. 29; *630*, p. 16; *760*, pp. 21-25, 32-33, 46.
Eureka-Kensington	167	Au, Ag	0021120099	*40*, No. F-15; *55*, pp. 159-160; *56*; *76*, p. 59; *77*, p. 41; *86*, pp. 67-68; *97*, p. 26; *98*, p. 32; *117*, pp. 317-318, 345-346; *120*, p. 12; *121*; *158*, pp. 77-78; *189*; *282*, pp. 77, 82-83; *285*, p. 101; *295*, p. 14; *483*, pp. 39-44; *534*, p. 30; *638*, p. 60; *675*, pp. 20, 35-36; *826*, p. 14; *827*, p. 16; *831*, p. 17; *832*, p. 16; *833*, p. 17; *834*, p. 17; *835*, p. 19; *838*, p. 17; *851*, pp. 36, 52; *852*, p. 24; *863*, p. 137; *922*, p. 38; *991*, p. 57; *996*, p. 54; *999*, pp. 32-33.
Flagstaff	218	Au, Ag, Cu, Pb.	0021190113	*40*, No. F-56; *55*, p. 169; *56*; *118*, pp. 8-9, 18; *157*, p. 65; *158*, p. 80; *184*; *231*, pp. 27-34, 51, 64-74, 106, 120-121; *246*, pp. 65-66, 68-70, 73-74; *407*, p. 17; *657*; *734*; *740*, p. 7; *750*, p. 3; *751*, pp. 5-6; *752*, pp. 7-8; *753*, pp. 1, 10-12; *784*, pp. 353, 356; *836*, pp. 21-22; *837*, pp. 19-20; *838*, pp. 18-19; *873*; *905*, pp. 10-13; *974*; *976*, p. 9; *987*, pp. 77-79, 82, 84-85, 89-91; *991*, p. 62; *998*, pp. 164-165; *999*, pp. 41-42.
Fortyseven Creek	107	Au, Ag, W, Sb.	0020820010	*40*, No. D-35; *121*, p. 13; *127*, pp. 119-121; *210*; *215*; *295*, p. 11; *302*.
Friendship	224	Cu, Au, Zn, Pb, Mo.	0021190094	*55*, p. 173; *100*, p. 87; *121*, p. 11; *184*; *231*, pp. 69-70; *246*, p. 70; *295*, p. 14; *335*; *987*, pp. 84, 85; *999*, p. 50.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
Frost	8	Cu, Zn, Pb, Ag, Ba.	0020270028	*40*, No. A-16; *270*; *295*, p. 42, No. 7; *366*.
Frying Pan	142	Fe, Ti	0021030034	*40*, No. D-60; *522*.
Galena Creek	24	Pb	0020300035	*40*, No. B-4; *48*; *690*, p. 138.
Glacier Creek Lode	156	Ba, Zn, Ag, Cu, Pb, Au.	0021090026	*40*, No. F-1; *56*; *121*, p. 18; *209*; *259*; *509*; *523*; *877*; *986*, pp. 2, 7.
Gold Cord	113	Au, Ag, Cu, Pb, W, Zn.	0020850066	*74*, pp. 39-40; *120*, p. 26; *121*, p. 16; *131*, pp. 180-181, 185; *153*, pp. 174-175; *154*, p. 204; *175*; *295*, pp. 12, 26; *296*, p. 8; *533*, p. 32; *534*, p. 34; *624*, p. 5; *673*, pp. 186, 188, 192, 215, 217-220; *674*, pp. 1, 31-32, 54-58; *737*, pp. 6-7; *749*, p. 19; *755*, p. 6; *826*, p. 16; *827*, p. 19; *829*, pp. 17-18; *830*, p. 17; *831*, p. 19; *832*, p. 19; *834*, p. 20; *836*, p. 23; *837*, p. 21; *838*, pp. 19, 21; *893*, p. 35.
Gold Hill	75	Au, Ag, Mo, Zn, Pb.	0020670119	*40*, No. E-22; *166*; *596*, p. 57; *835*, pp. 30-31; *901*, pp. 118-119; *984*, pp. 1-2.
Gold Standard Group	225	Au, Cu, Bi.	0021200002	*40*, No. F-62; *56*; *77*, p. 42; *80*, pp. 35-36; *158*, p. 82; *820*, p. 86; *826*, p. 16; *830*, p. 16; *831*, p. 16; *832*, pp. 16-17; *833*, p. 17; *834*, p. 18; *836*, p. 22; *837*, p. 20; *838*, p. 19; *991*, p. 63; *992*, p. 92; *998*, pp. 153-155; *999*, pp. 44-45.
Golden Horn	89	Au, Ag, W, Hg, Zn, Pb, Sb.	0020730027	*40*, No. D-16; *55*, p. 227; *78*, pp. 47-48; *120*, p. 10; *121*, p. 13; *188*; *216*, pp. 79-80; *232*, pp. 27-28; *295*, pp. 11, 26; *302*; *422*, pp. 1-7; *453*, p. 26; *476*, p. 5; *530*, pp. 4-5, 8-9, 17-18; *564*, p. 242; *571*, p. 259; *572*, pp. 116-117; *724*; *728*; *819*, pp. 145, 152; *832*, p. 25; *833*, pp. 27, 72; *835*, pp. 32-33; *840*, pp. 266-267; *849*, p. 287.
Granite	135	Au, Ag, Cu, Pb, Zn.	0020950226	*40*, No. E-78; *55*; *77*, p. 45; *80*, p. 14; *82*, p. 61; *461*, pp. 135-138; *462*, pp. 141-142; *463*, pp. 187-188; *464*, p. 149; *465*, p. 230; *522*; *534*, p. 33; *826*, p. 18; *831*, p. 22; *832*, p. 22; *833*, pp. 22, 25; *834*, p. 24; *835*, pp. 26-27; *836*, p. 27; *837*, p. 26; *851*, pp. 40-41, 52; *852*, p. 47.
Green Butte	123	Cu, Ag	0020870006	*40*, No. E-70; *55*, pp. 53, 56-57; *74*, pp. 28, 37; *81*, p. 23; *105*, p. 27; *512*; *513*; *520*; *522*; *534*, p. 31; *574*, pp. 98, 103-104; *589*, p. 121; *600*, pp. 27-28; *823*, p. 20; *824*, pp. 35-36; *825*, p. 47; *826*, p. 54; *827*, p. 60; *828*, p. 63.
Greenback	63	Cu, Au, Pb, Zn.	0020660047	*40*, No. D-12; *200*; *522*; *597*, pp. 319-320.
Hall Cove	239	Cr, Ni, Fe, PGM, Cu.	0021220002	*40*, No. F-77; *49*; *55*, p. 183; *205*; *244*, p. 10, No. 261; *245*, p. 137; *269*, p. 85, No. 239; *355*; *436*; *933*, p. 159.
Hannum	35	Pb, Zn, Ag, Au, Sn.	0020440001	*37*, p. 31; *40*, No. A-36; 55, pp. 114-115; *123*; *177*; *228*; *295*, p. 43, No. 27; *401*, pp. 5-6, 10, 17, 24-25; *430*; *588*, p. 54; *629*; *780*, pp. 13, 19, 23.
Hawk Inlet	169	Au, Ag	0021120086	*40*, No. F-25; *55*, p. 137; *56*; *74*, p. 12; *115*, p. 72; *116*, pp. 41-44, 47-50; *121*; *189*; *246*, p. 130; *492*; *494*; *671*, pp. 14-15, 20; *823*, p. 7; *827*, p. 16; *831*, p. 17; *832*, p. 16; *833*, pp. 16-17; *834*, p. 17; *835*, p. 19; *836*, p. 19; *837*, p. 18; *838*, p. 17; *898*.
Helen S	202	Zn, Pb, Au.	0021170014	*40*, No. F-44; *55*, p. 185; *56*; *114*, p. 67; *158*, p. 78; *202*; *991*, pp. 63, 72; *992*, p. 91; *993*, p. 73; *996*, p. 59; *998*, p. 184.
Helm Bay King	225	Au	0021190114	*55*, p. 179; *74*, pp. 10, 15; *77*, p. 42; *80*, pp. 35-36; *100*, pp. 57-60; *105*, p. 23; *115*, pp. 72, 128; *118*, pp. 6-8; *158*, p. 82; *184*; *231*, pp. 7, 24, 76-88, 110, 132-133, 166; *246*, pp. 66, 70-71, 73-75, 78; *256*, p. 35; *269*, p. 84, No. 236; *336*, pp. 3-4; *394*, p. 621; *407*; *721*; *726*, pp. 1-3; *730*, p. 4; *738*; *739*; *744*, p. 5; *751*, pp. 9, 10; *752*, pp. 2-3, 10, 12; *753*, pp. 2-4; *820*, pp. 86-87; *825*, p. 16; *826*, p. 16; *827*, p. 18; *830*, p. 16; *831*, p. 16; *832*, pp. 16-17; *833*, p. 17; *834*, p. 18; *836*, p. 22; *837*, p. 20; *838*, p. 19; *976*, p. 3; *987*, pp. 78, 86-87, 90, 92, 96; *991*, p. 63; *992*, p. 92; *998*, pp. 153-157; *999*, pp. 44-45.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
Herman	213	Au, Ag	0021380001	*44*, pp. 20, 125; *45*, p. 149; *55*, p. 5; *74*, p. 23; *77*, p. 47; *97*, p. 37; *98*, p. 43; *269*, p. 84, No. 200; *827*, p. 23.
Hi-Yu	45	Au, Sb, Pb, Ag, Zn.	0020490051	*74*, p. 15; *78*, p. 60; *80*, p. 45; *81*, p. 9; *82*, pp. 37-38; *105*, p. 35; *106*, p. 81; *124*, p. 15; *155*, pp. 327-329; *159*, p. 321; *163*, p. 7; *195*; *284*, pp. 236-237; *295*, p. 9; *410*, pp. 30-113; *453*, pp. 8, 10; *454*, p. 7; *475*, pp. 12, 14, 37-38, 41-42; *534*, p. 39; *560*, pp. 404-405, 407-408; *600*, p. 12; *821*, pp. 156-159; *822*, pp. 142, 144-145; *823*, p. 9; *824*, p. 13; *825*, p. 14; *826*, p. 17; *827*, p. 20; *828*, p. 20; *829*, p. 20; *831*, p. 20; *832*, p. 20; *833*, pp. 20-21; *834*, p. 21; *835*, pp. 23-24; *836*, pp. 25-26; *837*, pp. 22-23; *838*, pp. 22-23; *851*, pp. 23, 53.
Hope	224	Ag, Pb, Zn.	0021190092	*34*, p. 1; *40*, No. F-65; *55*, p. 173; *56*; *117*, pp. 367-368; *158*, p. 82; *184*; *231*, p. 91; *246*, p. 71; *748*, p. 6; *754*, p. 11; *806*; *987*, p. 87; *999*, pp. 53-54.
I X L	234	Cu, Zn, Pb, Ag.	0021200092	*269*, p. 85, No. 242.
Iliamna	149	Fe, Ti	0021030001	*40*, No. D-64; *55*, p. 14; *272*.
Illinois Creek/Round Top	53	Cu, Au, Pb, Zn.	0020550011	*40*, No. A-64; *120*, p. 8; *121*; *295*, pp. 8, 25.
Independence	113	Au, Ag	0020850061	*40*, No. E-58; *55*; *74*, p. 40; *79*, p. 48; *80*, p. 41; *105*, p. 30; *106*, p. 77; *120*, pp. 17, 26; *121*, pp. 16, 24, 25; *131*, p. 180; *137*, p. 127; *153*, p. 174; *154*, p. 204; *175*; *251*; *295*, p. 26; *296*, pp. 8, 13, 21; *338*, p. 6; *522*; *624*, p. 5; *673*, pp. 169, 188, 215-216; *674*, pp. 1, 32, 51-53, 58-65; *737*, pp. 1-5; *749*, pp. 20-23; *755*, p. 1; *824*, p. 12; *827*, p. 19; *831*, p. 19; *832*, p. 20; *834*, p. 20; *836*, p. 23; *837*, p. 21; *838*, pp. 19-20; *851*, pp. 44, 52; *852*, p. 40; *879*; *893*, p. 34.
Indian	96	Ag, Pb, Au, Cu, Bi.	0020760069	*40*, No. E-32; *55*; *522*.
Iniskin Bay	150	Cu, Au, Ag, Fe, Ti.	0021030006	*40*, No. D-65; *272*; *273*, p. 75; *521*.
Iron Creek	97	Cu	0020760034	*77*, p. 47; *96*, pp. 32-33; *97*, p. 28; *269*, p. 83, No. 127; *955*, pp. 79, 81.
It	219	Cu, Ag, Au, Fe.	0021190137	*40*, No. F-59; *55*, pp. 165-168; *56*; *77*, p. 42; *85*, pp. 17, 19; *95*, p. 38; *97*, p. 26; *98*, p. 33; *117*, pp. 316-317, 369; *118*, pp. 2-3; *156*, pp. 85-86; *157*, p. 64; *158*, pp. 83-85; *184*; *231*, pp. 6, 25, 32, 100-101; *246*, pp. 64, 66, 72; *256*, p. 34; *486*, p. 101; *533*, p. 28; *534*, p. 28; *638*, pp. 54, 62; *746*; *752*, p. 10; *852*, pp. 25-26; *946*, pp. 5, 32, 40, 50, 122-126, 132; *987*, pp. 75, 78-79, 88; *990*, pp. 73, 91, 94-95, 97, 100; *993*, p. 79; *995*, pp. 109, 113; *998*, pp. 118-121.
Jimmy Lake	110	Cu, Mo, Au.	0020830010	*40*, No. D-28; *121*, p. 13; *521*.
Johnson River	131	Au, Zn, Cu, Ag, Pb.	0020940032	*12*; *32*; *40*, No. D-55; *120*, p. 9; *295*, p. 12; *902*, pp. 7, 8.
Judd Harbor	239	Cr, Ni, Fe.	0021220003	*40*, No. F-77; *49*; *55*, p. 183; *205*; *244*, p. 10, No. 262; *245*, p. 137; *269*, p. 85, No. 239; *355*; *436*.
K A V	15	Cu, Ag, Sb.	0020280057	*40*, No. A-18; *270*; *544*.
Kathleen Margaret	77	Cu, Au	0020680036	*55*, pp. 27-28; *85*, p. 35; *164*; *199*; *246*, p. 196; *269*, p. 83, No. 130; *427*, pp. 5-6; *447*, p. 9; *469*, pp. 9-10; *534*, p. 20; *543*, p. 43; *759*, pp. 20-21; *764*, p. 10; *797*; *804*, pp. 7-8; *925*, p. 119; *926*; *957*, pp. 1, 9.
Kemuk Mountain	141	Fe, Ti, PGM.	0021020008	*40*, No. D-59; *55*, p. 11; *185*; *290*, p. 8; *302*; *433*.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
Khayyam	222	Cu, Au, Ag, Zn, Pb.	0021190036	*40*, No. F-64; *55*, p. 172; *56*; *100*, pp. 88, 94-96; *117*, p. 325; *118*, pp. 22-23; *121*, p. 36; *184*; *231*, pp. 11, 17, 84, 111-112, 167, 199-200; *246*, pp. 65, 71, 73, 78, 80; *256*, p. 36; *330*, pp. 1, 3-4, 6-8; *638*, pp. 54, 63; *735*, pp. 2-4; *748*, p. 10; *976*, p. 5; *987*, pp. 76-77, 86, 89, 97, 100; *991*, p. 69; *992*, p. 96; *998*, pp. 135-137; *999*, p. 49.
Kijik River	128	Zn, Au, Ag, Pb, Mo, Cu.	0020930002	*40*, No. D-47; *55*, p. 14; *76*, p. 64; *98*, p. 39; *193*; *291*, p. 5; *302*; *521*; *625*, pp. 3-4; *819*, pp. 137, 153; *840*, pp. 257, 268; *843*, pp. 190-191; *955*, pp. 76-77.
Kivliktort Mountain	6	Pb, Zn...	0020200003	*40*, No. A-13; *261*; *440*, pp. 122-143.
Kogoluktuk East	18	Cu.....	0020280049	*121*; *295*, p. 7.
Kougarok Project	33	Sn.....	0020430042	*40*, No. A-33; *120*, p. 10; *121*, p. 13; *295*, p. 8; *296*, p. 7.
Kupreanof Mountain	199	Cu, Zn, Ag, Au.	0021170082	*40*, No. F-41; *121*.
Ladue	85	Pb, Zn, Ag.	0020690035	*40*, No. E-44; *121*; *295*, p. 44, No. 58; *302*.
Landlocked Bay	139	Cu, Zn, Au.	0020960069	*40*, No. E-82; *55*; *76*, p. 62; *144*, pp. 14, 51, 96-97; *145*, pp. 122-123; *183*; *257*; *460*, p. 241; *461*, p. 133; *462*, p. 141; *463*, p. 186; *464*, p. 148; *522*; *573*, pp. 5-6, 17-18; *617*, pp. 57-58; *851*, pp. 41, 52; *852*, p. 48.
Latouche Island Copper Mining Co.	136	Cu, Zn ..	0020950001	*258*; *269*, p. 83, No. 160; *360*, p. 89; *455*, pp. 210-211, plate 12, No. 5; *462*, p. 139.
Leroy	160	Au, Ag, Cu, Pb, Zn, Cd.	0021110023	*40*, No. F-8; *55*, p. 160; *56*; *72*, pp. C195-C207; *236*, pp. 30-31; *334*; *416*; *519*, pp. 53, 55-59; *733*, pp. 3-5; *769*, pp. 37-39, 42, 45-46; *838*, p. 17; *905*, pp. 32-34.
Liberty Bell	55	Au, Cu, Bi, Ag, As, Sb.	0020580040	*40*, No. B-42; *55*, p. 202; *74*, p. 31; *75*, p. 98; *105*, p. 40; *120*, p. 9; *130*, p. 139; *173*; *269*, p. 82, No. 102; *295*, pp. 10, 44, No. 54; *522*; *534*, p. 41; *603*, pp. 340-345; *645*, pp. 351, 355-356, 360; *823*, p. 26; *829*, pp. 19, 80-81; *830*, pp. 19, 76; *831*, pp. 23, 80; *832*, p. 24; *833*, pp. 28-29; *834*, pp. 35-36; *955*, pp. 72, 81; *971*, p. 9.
London and Cape	122	Cu, Mo ..	0020870069	*40*, No. E-67; *55*; *512*; *520*; *522*; *605*, pp. 159-160; *622*, pp. 136-137.
Long Lake	98	Pb, Mo, Cu, Zn.	0020770047	*40*, No. E-33; *705*, pp. 31, 48; *712*, p. 2; *714*.
Lucky Shot	113	Au, Ag, Cu, Pb.	0020850052	*40*, No. E-59; *55*, p. 34; *74*, pp. 15, 40-41; *76*, p. 65; *77*, p. 48; *79*, p. 48; *80*, p. 41; *81*, p. 25; *95*, p. 35; *97*, p. 29; *98*, p. 39; *105*, p. 30; *106*, p. 77; *131*, pp. 178-179; *132*, pp. 260-262; *133*, p. 197; *143*, pp. 50, 66-69; *153*, pp. 173-174; *154*, p. 202; *175*; *467*, pp. 146-147; *522*; *533*, p. 32; *534*, pp. 34-35; *600*, p. 11; 673, pp. 169, 181-214; *674*, pp. 1, 31, 42, 83; *737*, pp. 8-12; 749, p. 16; *755*, p. 7; *823*, p. 8; *824*, p. 12; *825*, pp. 14, 46; *826*, p. 16; *827*, p. 18; *828*, pp. 16-17; *829*, p. 17; *830*, p. 16; *831*, p. 18; *832*, p. 18; *833*, p. 19; *834*, pp. 19-20; *835*, p. 22; *836*, p. 23; *837*, p. 21; *838*, pp. 19-21; *851*, pp. 44, 52; *852*, pp. 40-42; *983*, p. 214; *1002*, p. 1.
Lucky Strike	133	Au, Ag, Pb, Cu.	0020950292	*40*, No. E-75; *74*, pp. 15, 38; *77*, p. 46; *78*, p. 56; *79*, p. 45; *80*, p. 40; *81*, p. 24; *105*, pp. 29-30; *459*, p. 176; *522*; *540*, p. 171; *600*, p. 11; *824*, p. 12; *825*, p. 17; *826*, p. 18; *827*, p. 21; *828*, p. 20; *829*, pp. 20-21; *830*, p. 20; *831*, p. 22; *833*, p. 26; *834*, p. 33; *835*, p. 29; *837*, p. 25; *852*, pp. 35-36; *900*, pp. 494-498.
Mahoney	230	Zn, Pb, Cu, Au, Ag.	0021200024	*40*, No. F-70; *56*; *100*, pp. 63-64; *820*, pp. 88-90; *904*, p. 6; *998*, pp. 150-151.
Mallard Duck Bay	193	Cu, Au, Ag, Zn, Pb.	0021330004	*40*, No. D-86; *44*, p. 128; *55*, pp. 5-6; *182*; *481*, p. 222; *521*; *955*, p. 112.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
McLeod Bay	236	Au, Ag, Cu, Pb.	0021210005	*40*, No. F-75; *55*, p. 176; *56*; *85*, p. 18; *118*, pp. 31-32; *157*, pp. 70-71; *186*; *295*, p. 14; *313*; *752*, p. 2; *973*; *976*, pp. 3-4; *991*, p. 62; *996*, p. 67; *998*, p. 181; *999*, p. 43.
Midas	117	Cu, Au, Ag, Pb, Zn.	0020860062	*40*, No. E-68; *55*, pp. 69-70; *76*, p. 62; *77*, p. 45; *79*, p. 44; *81*, p. 24; *85*, p. 22; *87*, p. 117; *98*, p. 36; *247*; *358*, pp. 82-83; *446*; *456*, pp. 151-157, 187-188; *458*, p. 157; *460*, p. 240; *461*, pp. 132-133; *462*, pp. 144-145; *463*, pp. 184-185; *464*, pp. 144, 147; *522*; *533*, p. 31; *534*, p. 33; *593*, pp. 298, 302; *617*, pp. 51-52; *761*, pp. 1, 5, 12, 19; *808*; *851*, pp. 38, 40, 52; 852, pp. 46-47.
Mildred	191	Au, Ag, Pb, Zn.	0021150046	*40*, No. F-36; *56*; *71*; *80*, p. 36; *115*, p. 127; *212*; *517*, p. 5; *863*, pp. 41-42; *872*, p. 20.
Millet	144	Cu, Au, Ag.	0021030046	*40*, No. D-61; *55*, p. 15; *76*, p. 64; *98*, p. 39; *141*, p. 92; *272*; *521*; *541*, pp. 122-123; *542*, pp. 197-198; *625*, pp. 2-3; *777*; *819*, p. 150; *955*, p. 76.
Misheguk Mountain	3	Cu	0020190002	*40*, No. A-9; *269*, p. 78, No. 3; *366*.
Moonshine	224	Cu, Zn, Pb, Au, Ag.	0021190090	*34*, p. 1; *40*, No. F-65; *55*, p. 173; *56*; *81*, p. 20; *97*, p. 26; *98*, pp. 33-34; *100*, p. 88; *105*, p. 16; *117*, pp. 327, 367-368; *118*, p. 23; *158*, p. 82; *184*; *231*, pp. 137-138; *246*, p. 75; *486*, p. 102; *600*, p. 30; *638*, p. 54; *748*, p. 6; 754, p. 111; *806*; *987*, p. 93; *991*, p. 72; *992*, p. 97; *993*, pp. 83-84; *998*, pp. 187-188.
Mount Andrews Magnetite	221	Fe, Cu, Au, Ag, Co.	0021190004	*40*, No. F-60; *47*, pp. 32, 44-46; *55*, pp. 165-167; *56*, p. 22; *79*, p. 42; *85*, pp. 17, 19, 41; *86*, p. 76; *95*, pp. 38-39; *97*, p. 26; *98*, p. 33; *100*, pp. 102-103; *117*, pp. 316-317, 369; *118*, pp. 5-6; *121*, p. 36; *147*, pp. 80, 102, 112; *156*, p. 85; *157*, pp. 64-65; *158*, pp. 83-85; *184*; *231*, pp. 143-145, 159; *246*, p. 76; *256*, p. 34; *427*, pp. 6-7; *485*, pp. 141-142; *486*, p. 100; *533*, p. 28; *534*, p. 28; *638*, pp. 54, 61-62; *748*, pp. 5-7, 10; *831*, pp. 16-17; *851*, pp. 30, 52; *852*, pp. 25-27; *904*, p. 10; *914*; *946*; *958*, pp. 2, 4, 14; *975*; *976*, p. 2; *987*, p. 93; *990*, pp. 86, 88-89, 91-94; *991*, p. 67; *993*, p. 78; *995*, pp. 103-106, 113-114; *996*, pp. 63-64; 998, pp. 112-117; *999*, pp. 46-47; *1001*, pp. 2, 4-27.
Mount Eielson	69	Zn, Pb, Ag, Cu, Au.	0020660054	*40*, No. E-8; *55*, p. 230; *105*, pp. 42-43; *142*, p. 107; *200*; *348*; *522*; *597*, pp. 314-319; *628*; *691*, pp. 28, 30; *692*; *904*, p. 6; *955*, pp. 69-70, 81.
Mount Fairplay	82	Cu, Pb, Zn, Mo.	0020690029	*269*, p. 83, No. 140.
Mount Hurst	61	Cr, PGM, Fe, Mg.	0020640009	*40*, No. D-4; *717*.
Mount Ogden	172	Mo, Cu	0021130007	*40*, No. F-18.
Mount Prindle	46	U	0020500251	*121*; *269*, p. 81, No. 78; *295*, p. 44, No. 50; *296*, p. 9.
Mount Schwatka	43	Pb, Zn, Ag.	0020490151	*40*, No. B-27; *121*; *269*, p. 81, No. 77.
Mountain Top	108	Hg	0020820027	*122*, p. 27; *295*, p. 26.
Nabesna Glacier	102	Cu, Zn	0020780026	*40*, No. E-51; *715*; *716*.
Nabesna Mine	100	Au, Ag, Cu, Pb, Zn.	0020780010	*40*, No. E-48; *47*, p. 30; *55*, pp. 205, 208-209; *86*, p. 65; *120*, p. 11; *128*, pp. 90, 118; *138*, p. 224; *216*, p. 64; *269*, p. 83, No. 146; *490*, p. 30; *522*; 590, pp. 66, 189-190, 201-203; *606*, pp. 45-46; *611*, pp. 103-104; *612*, pp. 159-162; *614*, pp. 141-142; *618*, pp. 176-177; *619*, p. 58; *623*; *635*, pp. 3-4; *715*; *827*, pp. 22-23; *828*, p. 22; *829*, p. 21; *830*, pp. 18-19; *831*, p. 21; *832*, pp. 21, 66; *833*, pp. 21-22, 70, 72; *834*, pp. 23-24, 80; *835*, pp. 25-26, 85; *836*, pp. 24, 87; *837*, pp. 23-24, 80; *838*, pp. 24, 76-77; *948*, p. 168; *952*, p. 7; *955*, p. 108.
Naniratkohort Creek	10	Cu	0020280044	*40*, No. A-21; *121*; *269*, p. 79, No. 13; *295*, p. 6; *366*.
Nelson	124	Cu, Ag	0020870026	*40*, No. E-71; *55*, pp. 53, 59-60; *512*; *520*; *522*; *525*, pp. 6-9, 14; *526*; *574*, pp. 110-114; *783*, pp. 1-13; *827*, p. 60; *828*, p. 62.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
Niblack	226	Cu, Au, Ag, Zn, Pb.	0021190050	*40*, No. F-66; *55*, p. 174; *56*; *100*, pp. 75-78; *120*, p. 9; *121*, pp. 11, 36; *158*, p. 90; *184*; *231*, pp. 54, 61, 117, 149-150, 217, 223; *246*, pp. 74, 76; *256*, p. 35; *269*, p. 84, No. 238; *295*, p. 14; *339*, p. 7; *404*, pp. 1, 6-9; *468*, p. 11; *485*, p. 143; *638*, p. 63; *748*, p. 10; *820*, p. 82; *905*, pp. 7-8; *987*, pp. 83, 90, 94, 103; *991*, p. 70; *992*, pp. 95-96; *993*, p. 82; *996*, pp. 62-63; *998*, pp. 129-132; *999*, p. 50.
Nichols Bay	238	Cu, Pb, Zn, Au, Ag.	0021210001	*55*, p. 176; *157*, p. 67; *186*; *269*, pp. 84, 85, No. 238.
Nixon Fork Mine	62	Au, Cu, Bi, W.	0020650022	*40*, No. D-7; *55*, pp. 96-97; *74*, p. 15; *80*, pp. 59-60; *81*, p. 42; *105*, p. 47; *106*, p. 93; *111*, pp. 127-128, 130-134; *121*, pp. 16, 31; *197*; *225*, pp. 29-32, 40-41; *269*, p. 82, No. 109; *302*; *402*, pp. 2-3, 6-12; *536*, pp. 159-160; *564*, pp. 229-241; *572*, p. 116; *600*, p. 13; *683*, pp. 12-14, 16-18; *823*, p. 9; *825*, pp. 15-16; *826*, p. 18; *827*, pp. 20-22; *828*, p. 21; *829*, p. 22; *830*, p. 19; *831*, p. 23; *832*, pp. 21-22; *833*, p. 27; *834*, p. 33; *835*, p. 28; *836*, p. 29; *837*, p. 26; *838*, p. 26; *955*, p. 89; *970*, pp. 10, 12, 14, 16, 18-19.
North Bradfield River	208	Fe, Cu	0021180049	*18*; *40*, No. F-49; *55*, p. 193; *56*; *179*; *516*.
North Cleary Summit	42	Au, Sb, Cu, Pb, Ag, Zn.	0020490043	*121*; *163*, p. 9; *195*; *295*, p. 9; *821*, p. 175; *822*, pp. 161-162.
Nuka Bay	153	Au, Ag	0021040016	*40*, No. E-84; *55*; *207*; *522*; 702, pp. 6, 10-11; 827, p. 21; *834*, p. 30.
Ohio Creek	71	Au, Cu, Pb, Zn.	0020670142	*40*, No. E-9; *55*, p. 26; *121*; *130*, p. 135; *140*, pp. 228-229; *166*; *385*, pp. 8, 11; *522*; *765*, pp. 311-313, 316, 318-320; *955*, p. 73; *971*, p. 7.
Old Harbor	175	Cu	0021310045	*40*, No. D-80; *55*, pp. 87-88; *192*; *521*.
Omar River	7	Cu, Zn, Pb, Ag.	0020270020	*40*, No. A-15; *270*; *295*, p. 42, No. 7; *366*.
Orange Point	160	Zn, Cu, Au, Ag, Co.	0021110091	*40*, No. F-7; *56*, p. 82, No. 111; *72*, plates 1A, 1B, 2; *198*; *236*, p. 26; *518*, pp. 86-87; *519*, pp. 38-39, 51-52; *695*, pp. 52-80; *696*.
Ozzna Creek Tributary	91	Pb, Ag, Cu, Zn.	0020740033	*40*, No. D-23; *196*; *224*, p. 77; *522*; *679*, pp. 4-8.
Partin Creek	70	Cu, Au, Ag, Pb, Zn, Sb, As.	0020670003	*40*, No. E-11; *166*; *269*, p. 83, No. 122; *385*, p. 8; *522*.
Pass	127	Cu, Ag	0020930023	*40*, No. D-49; *302*.
Pat	207	U	0021180070	*295*, p. 14.
Patty	185	Zn, Pb, Ag, Au.	0021140197	*40*, No. F-37.
Peace River	36	Cu, Mo, U, Th, Au, Ag, Pb, Zn, Bi, Cr.	0020450001	*37*, p. 23; *40*, No. A-44; *55*, p. 119; *121*; *149*; *180*; *216*, pp. 46-47; *351*, pp. 9, 24-26, 28-31; *377*, p. 380; *430*; *576*, pp. 12-14, 18-19; *846*, pp. 114, 135; *847*, p. 340; *955*, pp. 17, 43-45; *971*, pp. 2, 5.
Peavine	124	Cu, Ag	0020870025	*40*, No. E-72; *55*, p. 60; *512*; *520*; *522*; *525*, pp. 8, 14; *526*; *574*, p. 120; *620*, pp. 166-167; *621*, pp. 89-90.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
Perseverance	171	Au, Ag, Pb, Zn.	0021120148	*47*, pp. 14-20; *55*, p. 154; *67*; *68*, pp. 1-17; *69*, pp. 1-18; *76*, pp. 58-59; *77*, p. 41; *80*, pp. 14, 36; *81*, p. 21; *97*, p. 25; *98*, p. 32; *105*, p. 8; *117*, p. 355; *158*, pp. 75-76, 98; *169*; *189*; *246*, p. 140; *267*; *282*, p. 80; *285*, pp. 98-100; *295*, p. 14; *485*, p. 135; *486*, p. 96; *533*, p. 29; *534*, p. 29; *561*, p. 106; *675*, pp. 28-32; *833*, p. 15; *834*, pp. 15-16; *851*, pp. 31-32, 52; *852*, pp. 17-18; *863*, pp. 74-76; *922*, p. 35; *947*, pp. 268-279; *983*, p. 197; *987*, p. 125; *991*, p. 55; *992*, pp. 87-88; *993*, p. 70; *996*, p. 53; *999*, pp. 37-38.
Peternie	81	Mo	0020690031	*40*, No. E-39; *121*; *269*, p. 83, No. 139; *295*, p. 44, No. 56; *302*.
Picnic Creek	19	Cu, Pb, Zn, Ag, Au.	0020290010	*40*, No. B-8; *120*, p. 8; *269*, p. 79, No. 18; *366*.
Pin Peak	216	Au, Ag, Cu, Pb, Zn.	0021190123	*40*, No. F-55; *55*, p. 170; *116*, p. 52; *184*; *231*, p. 189; *246*, p. 79; *987*, p. 99.
Point Astley	188	Zn, Pb, Cu, Ag, Au.	0021150019	*2*; *40*, No. F-34; *55*, p. 190; *56*; *71*; *91*, plate 9; *115*, pp. 131-133; *117*, pp. 318, 323, 327; *212*; *406*, pp. 68, 70-71; *424*, pp. 25, 27; *517*, p. 4; *675*, p. 33; *754*, pp. 17-18; *863*, pp. 44-45; *952*, pp. 6, 10; *955*, p. 60; *993*, p. 72.
Poovookpuk Mountain	60	Mo, Cu, Ag.	0020610009	*40*, No. C-1; *206*; *295*, p. 43, No. 39; *649*, pp. 8, 11-14.
Puale Bay	173	Cu, Ag, Au.	0021300011	*55*, p. 7; *190*; *269*, p. 84, No. 189.
Pyrola	183	Zn, Pb, Ag, Ba.	0021140184	*40*, No. F-29.
Quigley Ridge	65	Ag, Au, Pb, Zn, Sb, W, Cu.	0020660030	*40*, No. E-4; *55*, pp. 229-230; *74*, p. 29; *80*, pp. 52-53; *81*, p. 36; *105*, pp. 16, 42; *106*, pp. 84-85; *134*, pp. 102-103; *139*, pp. 320-321; *200*; *454*, p. 20; *597*, p. 330; *691*, p. 27; *831*, p. 25; *835*, p. 31; *836*, p. 30; *956*, pp. 368-369.
Rainy Creek Lode	78	Cu, Au	0020680159	*40*, *No. E-27*; *79*, pp. 43-44; *199*; 216, p. 68; *235*, p. 62; *246*, p. 197; *522*; *534*, pp. 20, 44; *551*, p. 117; *552*, p. 59; *596*, pp. 65-66; *760*, pp. 2, 34; *762*, pp. 19-20, 33; *825*, p. 26; *827*, p. 34.
Rat Fork	92	Pb, Zn, Cu, Ag.	0020740036	*40*, No. D-24; *196*; *224*, p. 81; *521*; *679*, pp. 4, 6-7, 11-21.
Ready Bullion	113	Au, Ag	0020850166	*295*, p. 12; *807*.
Red Devil	109	Hg, Sb	0020820005	*40*, No. D-19; *47*, p. 63; *55*, p. 89; *121*, p. 41; *127*, pp. 2, 65, 106, 108-111; *210*; *269*, p. 83, No. 183; *295*, p. 11; *300*; *302*; *321*, pp. 1-2, 4-10; *442*, pp. 14-18; *453*, pp. 21, 23-24; *454*, p. 17; *515*; *528*, pp. 31-33, 42-45, 53; *529*, pp. 2, 8, 11-33; *653*, pp. 12, 52, 85; *741*; *788*, pp. 2-3, 8-11, 20-21, 81; *804*, pp. 9-10; *838*, p. 90; *925*, p. 5; *935*, p. 35; *936*, pp. 16, 18-20; *950*, pp. 3, 9-18; *959*, pp. 1-6, 8, 11-19.
Rich Hill	221	Cu, Au, Ag, Fe.	0021190130	*55*, p. 168; *100*, p. 101; *118*, pp. 3-4; *156*, p. 87; *170*, pp. 1-6; *184*; *231*, pp. 45, 62, 171-172, 211; *246*, pp. 67, 78, 80-81; *256*, pp. 10, 34; *269*, p. 84, No. 235; *339*, p. 7; *533*, p. 28; *534*, pp. 28-29; *637*, p. 9; *638*, p. 62; *828*, p. 15; *946*, pp. 5, 32, 50, 126-132; *990*, pp. 94-95; *991*, pp. 67-68; *993*, p. 79; *995*, pp. 107-108; *998*, pp. 117-118; *999*, pp. 47-48.
Riley Lode	12	Cu, Ag, Au.	0020280047	*40*, No. A-26; *55*; *95*, p. 46; *366*; *533*, p. 42; *831*, p. 53; *832*, pp. 55-56; *833*, p. 58; *834*, p. 68; *835*, p. 73; *836*, p. 71; *837*, p. 67; *838*, p. 64; *841*, pp. 121-129; *848*, pp. 294-296, 299; *850*, pp. 324-325.
Roosevelt Creek	21	Cu, Pb, Zn, Ag.	0020300100	*40*, No. B-13; *121*.
Ross-Adams	237	U, Th, RE.	0021210003	*28*; *40*, No. F-76; *55*, pp. 183-184; *120*, p. 14; *121*, p. 5; *186*; *269*, p. 84, No. 238; *271*; *289*; *293*, pp. 5-6; *294*, p. 7; *296*, p. 9; *297*; *340*, pp. 30-31; *468*, p. 13; *510*, pp. 52, 60-93; *511*; *543*, pp. 44-49; *638*, pp. 53, 55, 63; *865*; *871*; *939*; *965*; *967*.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
Ruby	13	Cu	0020280042	*40*, No. A-21; *121*, p. 10; *269*, p. 79, No. 13; *295*, p. 6; *366*.
Salmon Bay	203	RE, U, Th.	0021170052	*40*, No. F-46; *52*, pp. 1, 8; *56*; *294*, pp. 1-12, 50-54; *356*; *971*, pp. 13, 14, 16.
Sawtooth Mountain	40	Sb, Au, Ag.	0020490002	*55*, p. 239; *195*; *269*, p. 81, No. 74; *295*, p. 26; *454*, p. 16.
Schaefer	126	Hg	0020920001	*40*, No. D-34; *55*; *127*, pp. 66, 108, 115; *213*; *269*, p. 83, No. 183; *302*; *528*, pp. 31, 40; *529*, pp. 2, 8, 39, 41, 44, 57; *776*, pp. 1, 3-4, 9; *788*, pp. 35, 40-43.
Schlosser	140	Cu, Zn	0020960014	*40*, No. E-83; *55*, pp. 69-70; *76*, p. 62; *80*, pp. 21, 40; *85*, p. 22; *97*, p. 27; *98*, p. 34; *106*, pp. 69-70; *144*, pp. 117-120, 122; *183*; *257*; *360*, p. 96; *363*, p. 63; *460*, pp. 240-242; *462*, p. 141; *463*, pp. 184, 186-187; *464*, pp. 144, 148-149; *522*; *533*, p. 31; *534*, p. 33; *593*, pp. 298, 302; *617*, pp. 60-61; *851*, pp. 38, 52; *852*, p. 43.
Seal Cove	228	Cu, Au, Ag, Zn.	0021200015	*97*, p. 28; *98*, p. 33; *100*, pp. 70-73; *158*, pp. 93-94; *269*, p. 84, No. 237; *485*, p. 143; *486*, p. 102; *820*, p. 93; *991*, p. 72; *993*, p. 83; *998*, pp. 139-140.
Sedanka Island	240	Pb, Zn, Ag, Au, Cu, Cd.	0021430005	*47*, pp. 42-43; *55*, p. 8; *214*; *269*, p. 84, No. 207; *276*, pp. 657-658; *495*; *904*, p. 7; *951*.
Serpentine Hot Springs	34	Sn	0020440011	*37*, p. 41; *40*, No. A-35; *254*, pp. 17, 28; *269*, p. 80, No. 36; *297*.
Sheep Creek	92	Pb, Ag, Cu.	0020740029	*40*, No. D-25; *522*.
Sheep Mountain	115	Cu, Ag, Au.	0020850098	*55*, p. 34; *142*, p. 73; *175*; *269*, p. 83, No. 156; *441*; *443*, p. 4; *448*; *449*.
Shellabarger Pass	94	Cu, Zn, Au, Ag.	0020750015	*40*, No. D-9; *167*; *522*; *678*.
Shishakshinovik Pass	17	Cu, Au, Pb, Ag, Zn.	0020280017	*37*, p. 23; *40*, No. A-19; *55*, pp. 105-106; *174*; *366*; *841*, p. 150; *850*, p. 342.
Shumagin	211	Au	0021380003	*44*, pp. 21, 125, 127; *45*, pp. 149, 151; *204*; *269*, p. 84, No. 201; *295*, p. 11; *535*, p. 101; *955*, p. 111.
Shungnak River	13	Cu, Zn, Pb, Ag.	0020280056	*40*, No. A-21; *269*, p. 79, No. 13; *366*.
Silver Bay	195	Au, Ag	0021160023	*53*, p. 79; *55*, p. 143; *203*; *295*, p. 14; *471*, pp. 72-73; *488*, p. 29; *991*, p. 60; *993*, p. 73; *999*, p. 45.
Silver Creek	99	Ag, Pb, Cu, Zn, Au.	0020770017	*40*, No. E-34; *55*, p. 45; *246*, p. 113; *522*; *590*, pp. 210-211; *594*, pp. 46-47; *635*, p. 3; *703*, pp. 9-10; *705*, pp. 32-33, 49; *712*, p. 2; *714*; *727*, p. 4; *890*, pp. 7-8; *952*, p. 8; *953*, pp. 16, 18.
Silver Star	121	Ag, Cu, Bi, Sb, Pb, Zn.	0020870049	*13*; *40*, No. E-66; *55*, p. 43; *120*, p. 26; *121*, p. 31; *512*; *520*; *589*, pp. 125, 129-130; *599*, p. 110; *622*, pp. 87, 110-112.
Siniktanneyak	5	Cr, asb	0020200006	*40*, No. A-11; *49*; *366*; *367*, p. 2.
Sitka	211	Au, Ag, Cu, Zn, Pb.	0021380002	*44*, pp. 21, 125-127; *45*, pp. 149-150; *120*, pp. 13, 17, 18; *204*; *295*, p. 11; *296*, p. 13; *535*, p. 101; *837*, p. 28; *955*, p. 111.
Slate Creek Antimony	64	Sb	0020660043	*40*, No. D-11; *47*, p. 67; *55*; *82*, p. 43; *120*, p. 25; *130*, p. 144; *134*, pp. 107-108; *139*, pp. 325-326; *299*; *301*, pp. 4-5, 20-28; *453*, p. 3; *522*; *597*, p. 313; *956*, pp. 353, 376-377.
Smucker	9	Zn, Pb, Cu, Ag.	0020280033	*40*, No. A-20; *120*, p. 8; *121*, p. 10; *248*; *269*, p. 79, No. 15; *295*, pp. 7, 42, No. 11; *366*; *413*.
St. John Harbor	204	Zn, Cu, Ag.	0021170055	*40*, No. F-45; *57*; *114*, p. 69; *121*; *295*, p. 13.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
Stampede	156	Au, Ag	0021090039	*76*, p. 60; *102*, p. 375; *105*, p. 25; *280*; *286*, pp. 14, 29; *295*, p. 13; *827*, p. 15; *994*, pp. 12, 19.
Stampede Lode	68	Sb, Au, Ag, Pb.	0020660010	*40*, No. E-2; *47*, p. 67; *55*, p. 230; *121*, p. 41; *130*, p. 144; *134*, p. 109; *139*, p. 327; *200*; *216*, p. 85; *269*, p. 82, No. 105; *295*, p. 44, No. 62; *301*, pp. 3-20; *453*, p. 3; *522*; *597*, pp. 311-313; *691*, pp. 27-29; *826*, pp. 70-71; *827*, p. 79; *828*, p. 80; *834*, pp. 35, 97-98; *835*, pp. 102-103; *836*, p. 102; *837*, p. 93; *838*, p. 89; *918*; *920*; *955*, p. 71; *969*.
Su	1	Zn, Pb, Ag, Ba.	0020180004	*120*, pp. 7, 8; *269*, p. 78; *296*, p. 6.
Sumdum Chief	190	Au, Ag, Pb, Zn.	0021150027	*40*, No. F-35; *53*, pp. 62-63, 75-76; *55*, p. 190; *56*; *71*; *117*, p. 317; *212*; *406*, p. 68; *490*, p. 20; *517*, p. 5; *675*, pp. 40-41; *757*, p. 50; *863*, pp. 4, 44; *922*, pp. 29, 36; *991*, p. 58; *992*, p. 90; *996*, p. 53; *999*, pp. 40-41.
Sun Group	19	Zn, Pb, Cu, Ag, Au.	0020290015	*24*; *40*, No. B-8; *120*, p. 8; *121*, p. 10; *269*, p. 79, No. 18; *295*, p. 7; *366*; *531*; *864*.
Sweetheart Ridge	187	Au, Ag, Cu.	0021150057	*40*, No. F-31; *56*; *71*; *121*; *676*.
Tanya-Marie	215	Cu, Mo	0021190077	*40*, No. F-54.
Taylor Creek	200	Zn, Pb, Ag, Cu.	0021170013	*40*, No. F-42; *55*, p. 188; *56*; *202*; *468*, p. 12; *473*; *998*, p. 142.
Tazimina	130	Cu, Mo	0020930022	*40*, No. D-53; *302*.
Tiekel Lode Prospect	118	Au	0020860152	*260*; *269*, p. 83, No. 153.
Tok River	80	Pb, Zn	0020690034	*40*, No. E-36; *121*; *269*, p. 83, No. 136; *522*.
Treadwell	171	Au, Ag, Pb, Zn, Cu, Mo.	0021120188	*40*, No. F-27; *47*, pp. 12-14; *53*, pp. 62-70; *55*, pp. 154-155; *56*; *76*, p. 58; *77*, p. 41; *80*, pp. 14, 36; *81*, p. 21; *86*, pp. 60, 67-76, 93; *91*, p. 6; *93*, p. 35; *94*, pp. 28-29; *95*, p. 33; *96*, p. 28; *97*, p. 25; *98*, pp. 31, 32; *103*; *105*, pp. 8, 23-24; *117*; *120*, p. 12; *158*, pp. 73-74; *189*; *246*, pp. 131-132; *269*, p. 84, No. 220; *282*, pp. 77-79; *285*, pp. 96-97; *295*, p. 14; *468*, p. 7; *479*; *485*, p. 134; *486*, pp. 95-96; *490*, pp. 20-21; *533*, p. 29; *534*, pp. 14, 29-30; *561*, pp. 112-113; *600*, p. 10; *638*, pp. 54, 60; *668*, p. 13; *675*, pp. 42-45; *825*, p. 12; *826*, p. 13; *833*, p. 15; *834*, p. 18; *843*, pp. 172-174; *851*, pp. 33-35, 52; *852*, pp. 20-22; *863*, pp. 3-4, 36, 90-116; *903*, pp. 4, 15, 19-23, 45, 85, 93; *911*, pp. 6-7; *922*, pp. 29, 39-40; *934*, pp. 194-195, 199; *962*, pp. 52-53; *987*, p. 115; *991*, pp. 50-53; *992*, pp. 86-87; *993*, p. 69; *996*, pp. 52-53; *999*, p. 39.
Trimble 1-35	112	Zn, Pb, Cu, Ag.	0020840031	*40*, No. E-31.
Trout Creek	29	Au, Mo, Zn.	0020400004	*55*, p. 240; *176*; *215*, p. 177; *269*, p. 81, No. 63; *843*, p. 197.
Twin Hills	67	Au, Ag, Cu, Fe, Pb, Zn.	0020660052	*40*, No. E-7; *55*; *200*; *522*; *597*, p. 323.
Upper Camp Group	25	Cu, Zn, Pb. Ag.	0020310023	*40*, No. B-17; *121*; *269*, p. 77; *366*.
Ursus	147	Fe, Ti	0021030015	*40*, No. D-67; *55*.
Valparaiso	227	Au, Ag, Pb, Zn, Cu.	0021190100	*40*, No. F-67; *55*, p. 174; *56*; *76*, p. 60; *77*, p. 42; *98*, p. 33; *100*, pp. 82-84; *118*, pp. 24-26; *121*, p. 17; *158*, p. 81; *184*; *231*, pp. 214-215; *246*, p. 82; *256*, p. 35; *269*, p. 84, No. 238; *339*, p. 6; *344*; *403*, pp. 11-13; *638*, pp. 54, 61; *740*, p. 4; *750*, p. 2; *751*, pp. 1-2; *806*; *820*, pp. 80-81; *827*, p. 18; *829*, p. 16; *831*, p. 17; *832*, p. 17; *833*, p. 18; *851*, pp. 30, 52; *852*, p. 27; *987*, p. 102; *991*, p. 62; *992*, pp. 91-92; *993*, p. 73; *996*, pp. 64-65; *998*, pp. 173-174; *999*, pp. 42-43.

See footnotes at end of tabulation.

ADDITIONAL MAJOR MINERAL DEPOSITS IN ALASKA—Continued

Name	Map No.[1]	Commodities[2]	MAS No.	References[3]
Virginia Creek	73	Cu, Pb, Zn, Ag, Au.	0020670024	*40*, No. E-19; *120*, p. 9; *121*, p. 11; *269*, p. 82, No. 100; *295*, p. 44, No. 54.
Warm Springs Bay	184	Cu, Mo	0021140154	*40*, No. F-38; *908*.
Warner Bay	194	Cu, Pb, Zn.	0021330005	*40*, No. D-87; *44*, pp. 21, 129, 131; *45*, p. 152; *55*, pp. 6-7; *85*, p. 35; *182*; *481*, pp. 222-223; *521*; *955*, p. 112.
Wheeler	51	Pb, Zn, Ag, Cu, Au.	0020530113	*37*, p. 28; *40*, No. A-53; *43*, pp. 5-6; *55*, pp. 115, 118; *150*, pp. 182-183, 210-211; *211*; *241*, pp. 167-168; *430*; *434*; *562*, p. 446; *689*, pp. 8-9; *787*, p. 10; *817*, pp. 246-247; *818*, pp. 343-344.
William Henry Bay	166	RE, U, Th.	0021120140	*40*, No. F-14; *55*, p. 162; *56*; *189*; *293*; *294*, pp. 12-17; *493*; *543*, p. 44.
Windy Creek	50	Mo, Pb, Zn, F, graph.	0020520032	*40*, No. A-57; *150*, pp. 185, 223; *269*, p. 80, No. 51; *295*, p. 43, No. 35; *430*; *562*, pp. 448-449; *592*, p. 136.
Wolf Creek Mountain	87	Hg, Sb	0020720004	*229*, p. 65; *269*, p. 82, No. 114.
Wolverine Chromite	114	Cr, Ni, Co.	0020850006	*168*, p. 5; *175*; *227*, p. 166; *244*, p. 9, No. 191; *269*, p. 83, No. 162; *522*, p. 6, No. 35.
Yuki River Chromite	54	Cr	0020550012	*40*, No. A-65; *325*.
Zarembo Island	205	Mo, U, F	0021170133	*121*; *269*, p. 84, No. 233.

[1] See figure 1.
[2] Chemical symbols are used, except for the following: asb, asbestos; graph, graphite; PGM, platinum-group metals; RE, rare-earth elements.
[3] Items in the list of references preceding this appendix.