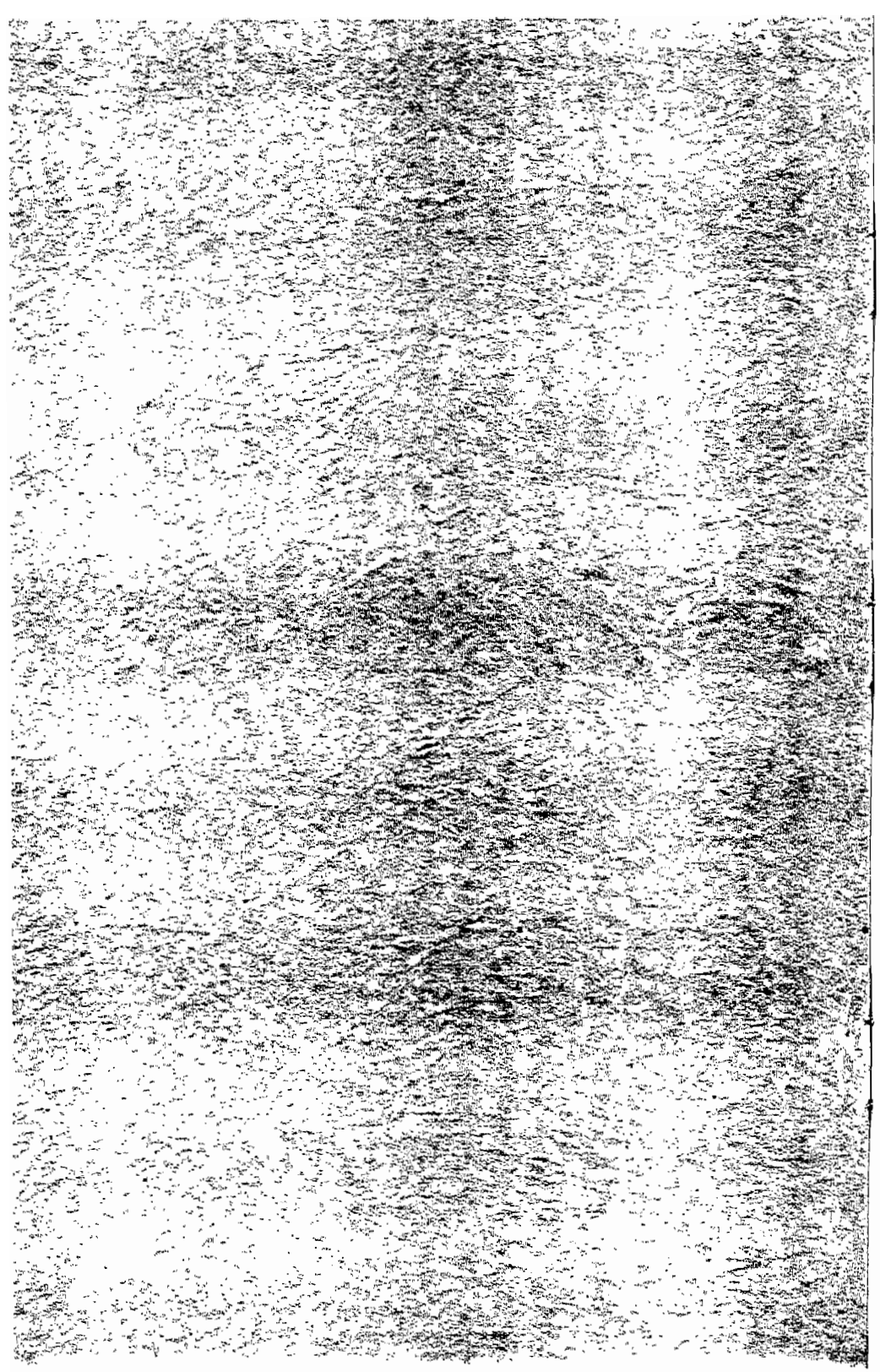

TERRITORY OF ALASKA
DEPARTMENT OF MINES

Report

of the

Commissioner of Mines

for the

BIENNIUM ENDED DECEMBER 31, 1956

DEPARTMENT OF MINES STAFF ON DECEMBER 31, 1956

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January 10, 1957

Honorable Waino Hendrickson
Acting Governor of Alaska
Juneau, Alaska

Sir:

I have the honor to submit to you, and through you to the Twenty-third Session of the Territorial Legislature, in accordance with Section 47-3-119, ACLA, 1949, the report of the Commissioner of Mines for the biennium ended December 31, 1956.

Respectfully submitted,

PHIL R. HOLDSWORTH
Commissioner of Mines

CONTENTS

THE DEPARTMENT OF MINES

Administrative and General Information

The Territorial Department of Mines, under the management and direction of the Commissioner of Mines, has charge of all matters affecting exploration, development and mining of the mineral resources of the Territory; the collection and dissemination of all official information relative to the mineral resources, and mines and mining projects of the Territory; and has charge of the administration of the laws with respect to all kinds of mining and mining safety.

The Department of Mines (TDM) conducts a continuing survey of the mineral resources and mining operations of the Territory and disseminates fnformation in regard thereto with a view to perpetuate and assist prospectors and miners; safeguards the lives and health of miners; protects investors in the mining industry; and otherwise fosters and promotes the best interests of the mining, mineral and related industries of the Territory.

For the purpose of aiding bona fide miners and prospectors and stimulating mineral discoveries, the Department of Mines maintains four public assay and field offices in the Territory located at Ketchikan, College, Anchorage, and Nome. Assistance is also rendered to mining people and others at the Juneau office.

In view of the extreme need for increased mining production in Alaska, the Department is exerting every effort within its means to obtain basic information on mineral deposits of possible commercial importance and to disseminate this information to interested miners and venture capital. During the biennium, more time than ever before was spent in all offices in giving advice and assistance to exploration parties, researchers, and engineers or geologists representing mining companies who are looking for mining or investment opportunities.

The Department also works continually for needed changes in mining, land, and tax laws which will make new mining ventures easier to achieve.

Protection of investors was another field of endeavor in which the Department increased its activity during the biennium. At the request of past, present, and prospective investors, various organizations and individuals were investigated and reported on as to their reliability, reputation, or methods employed. This is a distinct service to the legitimate operators as it helps maintain a good reputation for Alaskan mining in general.

The TDM publishes a monthly mining news and information bulletin called the **TDM Bulletin.** It has been widely praised by all who have read it, and has received national recognition by the mining industry. Its primary aim is to keep Alaskan miners and prospectors informed on mineral and mining matters, but "outside" companies have found it useful to maintain Alaskan contacts. Circulation at present is about 1,100. Information circulars are also published as the need arises.

The staff of the Juneau office of the Department includes Phil R. Holdsorth, Commissioner of Mines; James A. Williams, Territorial Mining Engineer; an Administrative Assistant; a Mineral Analyst; Clerk-Stenographer. Located in the Anchorage area are Martin W. Jasper, Territorial Mining Engineer; Wiley D. Robinson, Territorial Coal Mine Inspector; and William S. Powell, Assayer. Robert H. Saunders, Territorial Mining Engineer, and Donald R. Stein, Assayer, are stationed at College in the Fairbanks area. The Ketchikan office is presently operated by Arthur E. Glover, Assayer-Engineer, but he has tendered his resignation to be effective on or before June 1, 1957. The position of Assayer-Engineer at Nome has been vacant since Peter O. Sandvik of that office left the Department in August 1956. The TDM is endeavoring to obtain qualified replacements for the two offices.

New buildings for assay and field offices are needed at Ketchikan and at College or Fairbanks. The Ketchikan office is on city property which is about to be sold for another purpose. The College assay office is in a condemned building which the University intends to raze. Requested funds for this office were not appropriated by the 1955 Legislature, hence they are again being requested from the present Legislature in addition to the requested funds for new Ketchikan office quarters. The Nome assay office is complete and in operation except for the difficulty of retaining qualified personnel there. The Anchorage building, new in 1953, is the one field and assay office among the TDM field operations with no worries for the future, and is a credit to the Third Division.

Libraries of Alaskan publications issued by the U. S. Geological Survey, U. S. Bureau of Mines and the Atomic Energy Commission are maintained at the assay and field offices and the Juneau headquarters. These libraries are open to the public and, in addition to these publications, the Juneau office has collected much additional information on various properties throughout the Territory resulting from examinations and reports by engineers of the Department. The offices also maintain collections of classified rocks and minerals, including those of Alaskan origin, as a means of ready reference or identification by the prospector and miner.

Several thousand inquiries in regard to the mining industry by visitors and by correspondence were answered during the biennium. Professional advice in the way of examinations and reports is offered to the prospector and miner by Departmental engineers. This service is offered to those who cannot afford the employment of a private consultant. Reports of examinations by TDM engineers for private individuals are for their information only, and results of same are only made public upon authorization by the property owners, which is usually given. Many requests for this type of advice were received and resulting examinations made by members of the Department staff. Services include making contacts between holders of mining ground and prospective purchasers, when requested. Geophysical exploration projects on a moderate scale are also carried out by Department engineers.

Two new activities were added to the Department's functions by the 1955 Legislature: the acquiring and renting out of prospecting equipment for exploration purposes and the administration of a new law requiring explosives handlers to be examined and certified in Alaska. These additional duties have been adequately handled throughout the biennium with no increase in personnel for the purpose.

The Department's staff was enlarged by one person—a mineral analyst—during the biennium. This was to continue on a full-time basis the work on the complete bibliography and inventory of Alaskan mineral deposits authorized by the 1953 Legislature. During the previous biennium, the work was done only when per-

sonnel could be spared from their regular duties. This project has already been of great assistance to many individuals and mining company representatives who have come to the Juneau office in search of information on mining areas and properties for possible future operations. Although the work of detailed compilation is far from complete, the project is sufficiently well organized at present so that nearly all information on most specific areas or properties can be obtained in a few minutes. It should be noted here that the TDM files of mineral information have been completely reorganized so that all reports, maps, correspondence and data relating to area, prospects, or properties are filed according to geographical location in the Territory. The system of USGS quadrangles is used as a basis for the filing system. This makes a more efficient arrangement than before, and eliminates almost entirely the possibility of accidentally missing important information on a particular property or area.

The Central Recording function set up by the 1953 Legislature is continuing, and the claim location and assessment work affidavits are coming in regularly from the various U. S. Commissioners who are the recorders for their respective recording precincts. At the end of 1956, there were a total of 9,069 documents in the files, 2,553 having been received during 1955, and 2,489 during 1956. These represent ownership and other information on an estimated 12,000 unpatented claims in Alaska, and is the only way in which records on unpatented mining claims can be efficiently filed. In addition to being cross-indexed under three headings, this information is also being incorporated into the abovementioned mineral deposit inventory so that current ownership of deposits can be easily determined from one record. This system is a step ahead of the files at any of the State mining departments, and several of the State mining department executives have expressed their wish to be as progressive as Alaska on the matter. A discussion and illustration of the trends of claim staking as indicated by the documents coming into Central Recording is included under "Prospecting and Exploration."

The Department of Mines is responsible for the Coal Miners Examining Board. The Commissioner of Mines and the Territorial Coal Mine Inspector are chairman and member respectively. Two other members are chosen from the industry by the industry: one

from the operators and one from the coal miners' union. The purpose of the Board is to examine applicants who wish to obtain supervisory positions in the coal mines to determine if they have sufficient experience and knowledge for the safety of the men who work under them.

Since the Territory of Alaska joined the Interstate Oil Compact Commission as an associate (nonproducing) member, the Commissioner of Mines has been attending its meetings once a year as Alaska's official representative. He is now also a member of the Alaska Resource Development Board, the Board of Boiler Rules, and the Alaska Oil and Gas Conservation Commission, all of which will be detailed further in a later section of this report.

Cooperation with Federal Agencies

A cooperative exchange of information with the Atomic Energy Commission on radioactive properties in Alaska was carried out by the Department of Mines. There has also been a free exchange of information with the U. S. Geological Survey and the U. S. Bureau of Mines, and some joint inspections or examinations have been made. Occasionally the Department of Mines has been able to make preliminary examinations of prospects, on short notice, as a means of justifying further investigation by the Defense Minerals Exploration Administration field team. The TDM and the U. S. Bureau of Mines have in effect a formal signed agreement for the mutual cooperative interchange of information. This eliminates a certain amount of duplication of effort and is a saving of time and money.

Since the U. S. Bureau of Mines uses a system of region and mining district designations for its statistical reporting, and the U. S. Geological Survey now bases its geological information on its quadrangle system, the Department of Mines has adopted both systems in order to facilitate exchange of information with both agencies. In the text of this report, mining district designations are used in describing mining operations, etc., because the watershed boundaries of the districts seldom divide mining areas. In the appended tabulated list of active mining operations, both district and quadrangle designations are used in order that interested persons may also become familiar with the locations with respect to the USGC quadrangle maps which are now published for the entire Territory and have become widely used.

The USGC sends to the Department copies of "open file" reports pertaining to Alaska that are not available for public distribution, but which may be consulted at TDM offices.

The Department of Mines has received excellent cooperation from the Alaska Road Commission (now the Bureau of Public Roads) when requesting, with proper justification, aid for mine operators. The Bureau of Land Management and the Forest Service have cooperated to the best of their ability in supplying information on the status of mineral lands and claims when requested. The Forest Service, in particular, has received much information and help from the TDM in gathering information on mining claims and mineralized areas for their various programs, including the new Public Law 167, which has to do with surface rights on unpatented claims.

Field Investigations

Field examinations and technical assistance were given by members of the Department of Mines staff to those requesting this service. Examinations were made, and reports written or professional advice given, on those properties listed in Table I.

TABLE I—FIELD INVESTIGATIONS

Region and Property	Chief Minerals	Location	Type of Examination	Examining Engineer & Year
Bristol Bay Region				
McNeil	Copper-Iron	Paint River	Geological	Jasper—1955
Pfaff & Associates	Copper-Iron	Big Lake	Geological	Jasper—1955
Bonanza Hills	Gold	Bonanza Creek	Reconnaissance	Jasper—1955
Keyes	Copper	Iliamna Bay	Geological	Jasper—1955
Cook Inlet-Susitna				
W. Davis	Placer Gold	Camp Creek	Reconnaissance	Jasper—1955
F. Rafchlek	Placer Gold	Pass Creek	Reconnaissance	Jasper—1955
Cache & Peters Creeks	Placer Gold	Yentna District	Reconnaissance	Jasper—1955
Roehr & Wasnick	Radioactives	Goodhope Creek	Geological	Jasper—1955
Locke	Copper	Sheep Mountain	Geological	Jasper—1956
Anderson	Lode Gold	Lazy Mountain	Geological	Jasper—1956
Butte Creek	Copper	Trib. to Susitna River	Engineering	Saunders—1956
Kathleen-Margaret	Copper	Maclaren River	Engineering	Saunders—1956
Beluga Coal	Coal	Beluga River	Geological	Holdsworth&Robinson—1956
Houston Gas Well	Methane (?)	Houston	General	Holdsworth—1956
Copper River Region				
Ibach	Copper	Ibeck Creek	Reconnaissance	Williams—1955 & 1956
Owen Ore Co.	Copper	Prince William Sound	Geophysical	Williams—1956
I. N. Woodman	Lode Gold	Tonsina Lake	Geological	Jasper—1955
F. Bronnicke	Lode Gold	Ahtell Creek	Geological	Jasper—1955
Austin	Placer Gold-Copper	Grubstake Creek	Geological	Jasper—1955
Hobb Enterprises	Placer Gold	Slate Creek	Engineering	Jasper—1956
Kenai Peninsula Region				
Chrome Deposits	Chromite	Red Mtn. & Claim Pt.	General	Holdsworth—1955
Seldovia Chrome Co.	Chromite	Red Mountain	Geological	Jasper—1955

Kenai Chrome Co.	Chromite	Red Mountain	General	Jasper—1955
William Johnson	Lode Gold	Seward Highway	Geological	Jasper—1956
Dahl	Placer Gold	Seward Highway	General	Jasper—1956
Hatcher	Lode Gold	Seward Highway	Reconnaissance	Jasper—1956
Falls Creek	Lode Gold	Seward Highway	Reconnaissance	Jasper—1956
Kodiak Region				
Kodiak Exploration Co.	Tungsten	Kodiak Island	Geological	Holdsworth—1955
Kuskokwim River Region				
Red Devil	Mercury	Aniak District	General	Holdsworth & Jasper—1955 & 1956
Parks	Mercury	Aniak District	Geological	Jasper—1955
Mespelt	Lead-Silver	Mount Russell	Engineering	Saunders—1956
Northwestern Alaska Region				
Kobuk	Copper	Ruby Creek	Engineering	Saunders—1955 & 1956
Seward Peninsula Region				
Margraf	Bismuth	Charley Creek	Geological	Holdsworth—1955
Foster	Lead	Darby Mountains	Reconnaissance	Sandvik—1955
Taylor-Young	Radioactives	Candle Vicinity	Engineering	Sandvik—1956
Southeastern Alaska Region				
Ross-Adams	Radioactives	Kendrick Bay	Geological	Holdsworth—1955
Salt Chuck	Copper	Kasaan Bay	Geological	Holdsworth—1955
A. S. Glover	Radioactives	Admiralty Island	Reconnaissance	Holdsworth—1955
Peratrovich	Radioactives	Klawock	Geological	Holdsworth—1956
Johnny Boy & White	Copper	Juneau Quad.	Geological	Holdsworth&Williams—1956
I & L	Radioactives	Kendrick Bay	Geological	Williams—1955
Lazo	Radioactives	Kendrick Bay	Geological	Williams—1955
Carol Anne	Radioactives	Kendrick Bay	Geological	Williams—1955
B B H	Radioactives	Sumdum Quad.	Geological	Williams—1955

El Nido	Gold-Tungsten	Lisianski Inlet	Engineering	Williams—1955
Albill No. 2	Radioactives	Skagway	Geological	Williams—1956
Black Jack	Radioactives	Gravina Island	Geological	Williams—1956
Berg	Silver-Lead	Berg Basin	Reconnaissance	Williams—1956
Copper King	Copper-Zinc	Aaron Creek	Geological	Williams—1956
Yukon River Region				
Vuyovich	Gold	Ester Dome	Engineering	Saunders—1956
Mohawk	Gold	Ester Dome	Engineering	Saunders—1956
Alaska Metals	Tungsten	Gilmore Dome	General	Saunders—1955
Ready Bullion	Gold	Ester Dome	Engineering	Saunders—1956
Emericks	Gold-Copper	Rainbow Mtn.	Engineering	Saunders—1955 & 1956
Canyon Creek	Mercury	Trib. Seventymile Riv.	Reconnaissance	Saunders—1955
Flume Creek	Gold	Trib. Seventymile Riv.	Reconnaissance	Saunders—1955
Copper Creek	Copper	Trib. Charley River	Reconnaissance	Saunders—1955
Quartz Creek	Lead-Silver	Trib. Yukon River	Reconnaissance	Saunders—1955
Gill	Lead-Silver	Eureka-PioneerCreeks	Reconnaissance	Saunders—1955

In addition to the above table, numerous other visits to mining properties, prospecting sites, and tunneling projects were made by Department of Mines personnel for the purposes of safety inspections and enforcement, accident investigations, and giving technical advice. The Commissioner of Mines visited many mining operations, coal mines, and oil well drilling sites. The Coal Mining Engineer inspected all active coal mines at least once a month for safety conditions.

Safety Inspections

Safety inspections were made at all properties visited by the Department engineers. Inspections are also made at tunnel sites not directly connected with mining.

Monthly inspections of coal mines were continued by the Territorial Coal Mine Inspector stationed at Anchorage. The union-sponsored safety committees continued to work with the Department and mine management to keep the miners "safety conscious" and thus help to maintain a low accident rate in Alaskan coal mines.

The 82nd Congress, just before adjournment, passed a bill concerning coal mine safety which became Public Law 522. This law directs the U. S. Bureau of Mines to enforce the provisions of the Federal Coal Mine Safety Code, a duty which had previously been performed by State or Territorial agencies. The law provides for submission of a State or Territorial plan for approval by the Director, U. S. Bureau of Mines, before State or Territorial agencies can resume policing powers. The Department of Mines submitted a safety plan which was one of the first approved by the Bureau, and now is officially jointly responsible with the Bureau for the inspection and enforcement of safety conditions in Alaskan coal mines for the protection of the coal miners.

The biennium was favorable in the matter of fatalities in the mining industry. Only two fatalities occurred, and they were the results of a surface accident and an underground mishap at the same lode metal mine. There were none at the coal mines or in placer mining activities. Details on the fatalities are included in a later section of this report. Comparative coal mine nonfatal accident statistics follow:

	Man Shifts	Nonfatal Accidents	Accidents Per M.M.H
Strip	43,650	94	269
Underground	112,288	62	69
Total Alaska	155,938	156	125
U. S. Coal—States			48

Assay Offices and Field Stations

The assay offices and field stations of the Department of Mines at Ketchikan, College, Anchorage and Nome performed analyses and mineral determinations during the biennium. This service is offered free of charge to bona fide prospectors and miners and serves to encourage the search for minerals in the Territory. The following tabulation compares the number of samples handled for the past four years:

	1953	1954	1955	1956
Gold and silver	1067	1630	1692	1535
Chemical analyses	805	1696	1687	1517
Coal analyses	29	7	5	9
Mineral identifications	852	743	655	628
Spectrographic analyses			224	339
Totals	2753	4076	4263	4028

The above table shows the trend noted in the field of peak prospecting years in 1954 and 1955 and a slow decline in 1956. The decline in assays, however, is not as steep as in claims staked during the year. Chemical assays appear to have declined far more than they should have in relation to the type of prospecting they represent, but this is misleading because the spectrographic analyses have taken the place of many of what would have otherwise been mostly "wet" assays. The chemical assays for the biennium were mostly for the following metals in the order of their frequency: copper, uranium, nickel, tungsten, lead, zinc, mercury, chromium, iron, and molybdenum.

The new assay office at Nome was completed and put into business during the biennium, with all assaying equipment installed. The office and laboratory were constructed in a building purchased the previous biennium. It was moved on to a concrete basement, built by the Department, on a lot donated by the City of Nome. At this station only, the TDM furnishes limited living quarters to the assayer.

The assay office at College is, and has been for many years, housed in quarters that are entirely inadequate and positively unsuitable for the large work load of the Fourth Division. It is in the basement of the old University power plant. This building has been condemned and the University is planning to raze it. For the above reasons, then, a move of this office is imperative. A construction fund for a new building to house the College assay office, as well as the field office of the mining engineer stationed at College, was requested of the 1955 Legislature but it was not appropriated. It is again being requested of this Legislature, in addition to a further sum for a new Ketchikan office which will be necessary in the approaching biennium.

When the College office is moved, it is felt by the Department that it should be relocated in Fairbanks for better service to the mining public. The TDM is a public service agency and can better serve the miners and prospectors if in town where people can drop in at their leisure or when passing through town without much time to spare, and avail themselves of the library of geological bulletins and reports, the display of rocks and minerals, and the technical advice and help of the assayer and the mining engineer. This has been proven at Anchorage and Ketchikan where the number of visitors to those offices exceeds the number at College far out of proportion to the relative amounts of regional activity. The extra time and effort involved in travelling between College and Fairbanks keeps many potential visitors from our College offices. Further, while it is true that there are definite academic advantages to the College location, the TDM is primarily a service agency rather than a research organization.

At Ketchikan, the assay office is in a city-owned building on a city-owned lot, and the property is about to be sold for other purposes. If funds are not made available for construction of a new building, it appears that there will be no assay office there in the near future. This would be a very unfortunate circumstance, as the prospecting and mining interest has increased much more in that area during the past few years than anywhere else in Alaska. Also, it is in that region that the best chance for new Alaskan mining production lies, and everything possible should be done to foster and encourage it.

In this plea for construction funds for Fairbanks and Ketchikan, it should be noted that an assay laboratory can not be moved into just any building that happens to have available rental space. There must be provisions for all types of chemical work, installation of high-temperature assay furnaces, proper facilities for exhausting gases, solid foundation for delicate analytical balances, etc., that cannot be found in the ordinary building.

New Activities

Two new types of analyses were added to the Department's assaying services during the biennium: spectrographic and fluorimetric. The new spectrograph is located at the College office. It provides a means of determining quickly all the principal and minor and most of the trace elements in an ore sample. This quite often results in finding certain valuable elements in a sample that otherwise may be accidentally missed by ordinary assay methods, and hence is a valuable addition to the TDM services.

The fluorimeter is at the Ketchikan office. This instrument is used to determine the actual amount of uranium in a sample. With Geiger or scintillation equipment, one can determine the relative total amounts of radioactivity in samples, but not the portion of the total that is caused by uranium only nor the amount that is caused by the other radioactive elements that are nearly always associated with uranium. The fluorimetric process takes the guesswork out of radioactive assaying. Its value is obvious. It is the only equipment of its kind in Alaska.

Chapter 129 enacted by the 1955 Legislature put the Department into the prospectors' equipment rental business. Under the provisions of this Act, there were purchased for rental to prospectors eight diamond core drills, sixteen Geiger counters, and sixteen Mineralights, which were divided equally among the four judicial divisions. This equipment has been rented out to many prospectors during the biennium, helping their prospecting ventures greatly. Since the Act made no provision for disposition of the rental money, it has been regularly turned into the General Fund of the Territory. The TDM is in hopes that a change can be made in the Act whereby the rental receipts can be placed in a special fund for the purpose of maintenance and replacement of the rental equipment.

The TDM was given the task of examining and licensing explosives handlers in the construction industry by the 1955 Legislature. Chapter 120 requires that all men hired for the purpose of detonating explosives must be certified by the TDM as fit and competent, and that the TDM must determine their fitness by examination. Miners, prospectors, and self-employed persons are exempt. Although it is felt by the Department that this function should more properly be administered by the Territorial Department of Labor, since the Act was passed expressly for the benefit of construction workers, the TDM has nevertheless done the work to the best of its ability without an increase in personnel. Explosives handlers' examinations were given at all stations and in other locations as field trips on regular business permitted. Also, trips

were made to outlying communities to give examinations when the demand was particularly great from a number of applicants, but this was kept to a minimum because of the extra expense involved. Trips in this latter category were made to Adak, Kodiak (twice), Sitka, Haines, Petersburg, and Wrangell. Examinations have been given to 190 applicants, of which 185 were successful and received certificates of fitness. A fee of $5.00 is charged for each examination, and the receipts are turned into the General Fund.

Chapter 180, SLA 1955, created the Alaska Resource Development Board, replacing the old Alaska Development Board. The Commissioner of Mines, with certain other department heads, was made a member of this Board.

Chapter 132, SLA 1955, created a Board of Boiler Rules on which the Commissioner of Mines serves.

Chapters 40 and 189, SLA 1955, set up an Alaska Oil and Gas Conservation Commission and a procedure for leasing oil and gas lands at such time as Alaska comes to own mineral lands in the Territory. The Commissioner of Mines has important duties under both Acts.

THE MINING INDUSTRY

Alaska's total mineral production, dollar-wise, for the 1955-1956 biennium increased by 3% over that of 1953-1954. This increase was due mostly to a large rise in the production of sand and gravel which was of sufficient magnitude to increase the total value in spite of decreased production of coal and gold. Tonnage of coal produced during the biennium decreased by 12% from the previous biennium, and gold production decreased by nearly 10%. This drop was all in 1956 with gold, but coal production has increased somewhat in 1956 over 1955. (See Table II.) Coal production hit its highest peak in 1953 when 861,471 tons were mined. Gold production reached its highest point since the war in 1950 when over 289,000 ounces were mined, remained fairly steady for the next five years at 230,000 to 250,000 ounces, but dropped to about 205,000 ounces in 1956. The amount of chromite mined during the biennium increased by nearly 500% from 1953-54 due to the efforts of Kenai Chrome Company. Mercury production also increased several fold because of the new operation at the Red Devil Mine. Tin production stopped in late 1955 when the U. S. Tin Corporation closed down the Lost River lode mine. Building stone is low again after a quick rise over two or three years. A little antimony, clay, copper, lead, and jade were mined during the biennium. Silver is produced as a by-product of gold mining. It appears now that gold has finally been replaced by sand and gravel as Alaska's most important mineral, with coal well back in third place. Platinum is fourth highest in value. Chromite and mercury are in fifth and sixth places, the order depending on whether one is calculating for 1956 or for the biennium.

The old story of adverse economic conditions in Alaska holding back mining since the war still holds true, only more so. Gold mining continues to be squeezed out of the picture by continually rising prices and costs against the fixed price. The number of small placer operators diminishes each year, and some of the larger dredging operators report that they cannot hold on much longer under the present trends. Only a few small intermittent lode gold operations remain.

TABLE II

Mineral Production of Alaska, 1954-1956

	1954		1955		1956 (1)	
	Quantity	Value	Quantity	Value	Quantity	Value
Antimony ore ..... short tons	.....	.....	.....	.....	(2)	(2)
Chromite ..... short tons	2,953	$ 208,257	7,082	$ 625,340	7,200	$ 704,000
Clay ..... short tons	(2)	(2)	1,112	3,836	.....	.....
Coal, bituminous ..... short tons	666,618	6,442,414	639,696	5,759,000	697,730	6,330,000
Copper ..... short tons	4	2,360	1	746	.....	.....
Gold ..... troy ounces	248,511	8,697,885	249,294	8,725,290	204,300	7,150,500
Lead ..... short tons	.....	.....	1	298	.....	.....
Mercury ..... flasks 76#	1,046	276,552	(2)	(2)	3,414	837,140
Sand and gravel ..... short tons	6,639,638	6,301,939	9,793,214	8,242,344	9,100,000	8,300,000
Silver ..... troy ounces	33,697	30,497	33,693	30,494	26,700	24,165
Stone ..... short tons	283,734	465,423	265,740	289,589	50,000	22,000
Tin ..... long tons	199	409,953	86	182,484	.....	.....
Undistributed (3)	.....	1,572,150	.....	1,552,427	.....	1,551,500
Total		$24,407,000		$25,412,000		$24,919,000

(1) All figures for 1956, and coal figures for 1955, are preliminary and subject to revision.

(2) Value included with "Undistributed."

(3) Includes gem stones, platinum, antimony, coal and other minerals whose values must be concealed to avoid disclosing individual company incomes.

(4) No zinc production.

Note: Above statistics, with the exception of the 1956 coal figures, prepared by William H. Kerns, Alvin Kaufman, and Anthony Evans, Mineral Industry Division, U. S. Bureau of Mines, Alaska District, Region I, P. O. Box 2688, Juneau, Alaska.

Average Metal Prices as Quoted by E. & M. J.

TABLE III

	1954	1955	1956	1/3/57
Copper, domestic, f.o.b. refinery	29.694	37.491	41.818	35.600
Copper, foreign, f.o.b. refinery	29.889	39.115	40.434	33.450
Lead, common, New York	14.054	15.138	16.013	16.000
Lead, common, St. Louis	13.854	14.942	15.813	15.800
Zinc, Prime Western, St. Louis	10.681	12.299	13.494	13.500
Tin, Straits, New York	91.838	94.735	101.409	99.500
Silver, foreign, New York	85.250	89.099	90.826	91.375
Quicksilver (per flask 76-lb.)	$264.386	$290.348	$259.923	$256.000
Antimony, New York, (cases)	31.970	33.651	36.470	36.470
Antimony, bulk, Laredo	28.500	30.181	33.000	33.000
Platinum, refined	$ 83.897	$ 85.978	$103.896	$104.000
Cadmium (producers quotation)	172.500	170.000	170.000	170.000
Aluminum, 99 plus percent, ingot	21.784	23.668	26.010	27.100
Magnesium, ingot	27.000	29.678	33.966	35.250
Nickel, electrolytic	60.453	64.500	65.165	74.000

Base metal production increased considerably from the previous biennium, but was still the result of only three operations, and only one of these (Kenai Chrome Company) operated throughout the biennium. The Red Devil mercury mine was closed by a fire in 1954 and did not get back into production until early 1956. U. S. Tin Corporation at Lost River closed its mine in late 1955.

Prospecting and exploration activities continued to increase from the high of the previous biennium, but may now have reached a peak because of waning interest in uranium in Alaska and the settling down of various companies to specific programs at certain properties or areas. Certain companies have entered the second phase of exploration projects, however, that should continue for a time and eventually prove up commercial ore bodies in at least a few cases. Other companies have been discouraged and backed away from Alaska because of the lower cost of exploration and mining in other countries. Individual prospecting has continued at a high level in the Ketchikan District, but is decreasing elsewhere, particularly for uranium.

Activity in nonmetallics continues at a low ebb except for sand and gravel. The quest for sulfur in Alaska seems to have subsided except for Northern Pyrites Company which is drilling a sulfide body at Latouche Island in the expectation of developing a minable sulfur reserve. In case of mining there, the copper and iron content will probably also be recovered in the refining process. Some

building stone was quarried, jade was brought out of the Kobuk country, mica was developed in Southeastern Alaska, and a large number of limestone claims were staked.

Prospecting for radioactives reached its peak in 1955, and several promising prospects were discovered as previously predicted by the TDM. Two of these were under development by large mining companies at the close of the biennium. The decline of the uranium interest by prospectors is probably mostly due to the general failure of uranium mining companies to follow up and investigate reports of favorable prospects. The Defense Minerals Exploration Administration participating loan activity decreased markedly during the biennium. However, an increase in preliminary inquiries and applications late in 1956 indicate more activity in this program of financial assistance for the next biennium.

A Small Business Administration office was set up in Anchorage, but there is no help for the miner forthcoming from this loan agency under its present policy.

At least ten major oil firms and a number of smaller organizations, Alaskan and Stateside, are actively engaged in Alaska oil ventures. Four actual drilling projects are under way, one of them with two drill rigs. A fifth was completed in 1955. More drilling projects are on the way. Applications have been filed for over 5,000,000 acres of oil lands so far, and much geological and geophysical exploration continues to be done. The establishment of proven oil reserves by private industry is only a matter of time.

Future and Needs of the Industry

The future of gold mining is well known. Gold mining can only continue to decrease under the present fixed gold price and the continual inflationary spiral of operating costs. Government and defense construction, once thought to be slowing, now appears to be increasing again, and the competition from this industry is as much, if not more, in existence than at any time since the war.

Coal mining is apparently steadily losing the battle with oil for the Territorial fuel market. Carelessness of the operators in not delivering a clean product to the consumer is partly to blame. New installations favor oil heat, and old installations are converting to oil.

At the present rate of prospecting and exploration, the future of base metal mining looks encouraging. As stated earlier, with the exploration parties now in the field and the projects under way, minable ore bodies will no doubt be outlined in at least a few cases. However, more parties and companies need to be encouraged to take to the field in search of base metal deposits, because the activity is showing signs of beginning to diminish. This is particularly true in the case of the individual independent prospectors, who are a very necessary link in the chain of people and events that lead to producing mines, all the modern geophysical exploration methods notwithstanding.

The more important needs are outlined in the following section under "Basic Requirements." They deal with prospecting, mineral resources information, the patented land problem, tax incentives, and economic and political conditions. Other problems include land withdrawals, Indian claims, discriminatory government purchase programs, and noncompulsory assessment work affidavits.

Withdrawn lands are retarding Alaska's mineral development in several places. The Naval Petroleum Reserve No. 4 situation is discussed under "Oil and Gas." If efforts to have the status changed of a withdrawn 320-acre site at Klukwan fail, it will mean the end of that promised large mining operation. Canadian interests wanted to try mining the sulfur on Makushin Volcano two years ago, but the land was within a military withdrawal. It is understood that the land there has been since released, but the interested parties have turned their attention elsewhere in the meantime. The military is applying for several more withdrawals at the present time, at least three of which cover definite mineral lands.

For many years the Indian claims, or aboriginal rights claims, have confronted Alaska, and clear title to much mining land depends on the settlement of these claims. Yet, the settlement continues to be delayed each year and seems no closer than before. Until a settlement is reached, no one can be certain he has clear title to the claims he wishes to mine. It can be seen that it will be a boost to the future of mining to have this problem eliminated as soon as possible.

The General Services Administration mineral purchasing program is of little help to the small Alaskan miner, and parts of it are definitely discriminatory against the Alaskan. For example, a letter from GSA informed the Department of Mines, "The Domestic Mica Program applies only to mica mined in the 48 States and does not include mica mined in Alaska." This sort of thing is infinitely unfair to the Alaskan miner and a deterrent to the Alaskan mining industry. There are in Alaska innumerable small deposits of tungsten, antimony, lead, tin, mercury, molybdenum, manganese, zinc, copper, and chromium, which could be worked if a market were available for the ores in small lots. The Federal Defense Minerals Administration should initiate a buying program in the Territory.

On the subject of aid to the mining industry, the Territorial Department of Mines believes strongly that if the Government would set up local ore purchasing depots with guaranteed minimum prices, rather than the present system of loans against future production, many small mines would come into existence, a definite boost to the Territory's economy would result and, last but not least, the Government and the tax payers would then be getting minerals for their money.

At present, the filing of assessment work affidavits showing that the required annual improvement work on claims has been done is not required by law. Hence, it is often impossible to know the actual ownership status of mining ground. Confusion sets in, developments are halted, and the Territory is the loser of another possible mining operation. An important case in point is the Yakobi Island nickel controversy. When no assessment work affidavits were filed for two years, Canadian interests, thinking the ground had been abandoned, staked it and started laying plans for exploration and development. The former holder then declared he had been doing the assessment work, was in fact still holding the ground legally, and had been negotiating a deal on the property at the time with a nickel company. So the matter went to court and the dispute is still continuing. If either party could have proceeded with his announced plans, the Territory would be having a nickel exploration program there today which could have developed into a large producing operation. Compulsory assessment work affidavits would prevent this sort of thing from happening, and they should be legislated into effect. Then there would be no further misunderstandings between prospectors and claim holders, and production would result instead of lawsuits.

To take fullest advantage of the new roads, clearings, and bedrock exposures resulting from the greatly expanding logging industry in Southeast Alaska, some effort should be devoted to geological and economic mineral reconnaissance over these areas. Cooperation of the logging companies and the U. S. Forest Service should be sought in an effort to have logged-off areas reasonably free of impediments to travel after the logging operations are concluded. Unless some effort is made along this line, these areas become almost impassable after a short period of years, and efforts to prospect such lands are well-nigh hopeless.

Basic Requirements for Development of a Sound Mining Industry

There are several requirements that are basic for the development of a sound mining industry in the Territory of Alaska.

First, active groups of real down-to-earth, economically-minded, hard working prospectors are necessary. These men, or the people backing and directing them, must be aware of the current and present-day importance of all minerals, the existing labor, materials, and transportation problems and costs, etc., as well as possessing a good basic knowledge of mineralogy and geology. This requirement is being partly fulfilled, but only to a small degree relative to what is really desirable.

Second, all known information on the mineral resources of Alaska, including the economic features of the mineral deposits, accessibility, operating and marketing costs, land ownership, etc., should be made available to interested mine operators and venture capital. This is being accomplished as rapidly as possible by the Territorial Department of Mines as noted earlier in the first section of this report.

Third, the patented land problem must be cleared up. At present, if the owners of patented mining claims are dead or cannot be found, there is no legal way of obtaining the ground for exploration or mining. If the owner is a defunct corporation, the method is expensive, time-consuming, and uncertain. This situa-

tion has blocked many mining developments in Alaska, and will continue to block them until there is a change. A workable land registration law or a nominal property tax are solutions to the problem. A land registration law was enacted by the 1953 Legislature and amended by the 1955 Legislature which may eventually answer the need. At the close of the biennium, many patented claims have been declared delinquent under the Act, but the actual process of foreclosing on them by the Territory has not yet been worked out and needs to be defined by the 1957 Legislature.

Fourth, and of prime importance, is a worthwhile incentive which can be offered to investment capital to attract it to the Territory's mineral resources. The incentive, of course, is a tax structure favorable to prospective investment capital. The Territory was quite generous in this respect when the 1953 Legislature granted a 3½ year mining tax exemption to all new mining operations. But the Territorial tax is small in comparison to the Federal tax. If the Federal Government would follow the example set by the Dominion of Canada in this matter, the effect would soon be shown in an increase in mining in Alaska.

Other requirements are improvements in economic and political conditions. Everyone is familiar by now with the difficulties and high costs in Alaska of securing efficient labor, equipment, supplies, and dependable transportation. Politically, the attitude of several of the Federal agencies toward Alaskan mining is not helpful and often a deterrent. A former Secretary of the Interior spoke truly when he said in an address, ". . . . History has shown that even the most promising ideas and discoveries will come to naught if the economic and political climate in which they can grow and come to fruition is lacking."

The best example of the workings of a good incentive system is our neighbor—Canada. The provinces and the Dominion have applied all of the above principles, in various ways, with the result that Canadian mining has shown a phenomenal growth since World War II, and American capital is going into these Canadian developments by the billions of dollars. Alaska's mineral resources and geology are comparable to those of western Canada. A comparison of the mining industries and the environments in which they operate will give one the answer to the question, "Why is Alaska's mining industry at a standstill?"

Prospecting and Exploration

The number of prospectors in the field reached a peak in 1955 and declined in 1956. Especially noticeable was the drop in the number of uranium prospectors in all parts of Alaska in 1956 after a rather spectacular start by one company in the Ketchikan District in 1955 which created much interest and caused increased field activities that year. Uranium prospecting is now also declining in the States, but it is felt that the major reason for the sudden decline in Alaska is due to the reluctance of mining companies to interest themselves in reported promising radioactive prospects in the Territory. However, it is noted that the biggest drop was among the amateur and week-end prospectors. The more serious and professional prospectors are mostly continuing their interest, but very few are still looking for uranium. There were probably nearly as many serious prospectors looking for base metals in 1956 as earlier.

The total numbers of claims staked in Alaska (of which the TDM has received record) during the past four years, 1953 to 1956 inclusive, are 1,252, 1,796, 1,807, and 1,513 in chronological order. Minerals for which the largest numbers of claims were staked during the biennium are the following in order of their importance: uranium, placer gold, copper, iron, lode gold, nickel, limestone, and chromite. These figures fairly well bear out observations of TDM personnel as to the relative prospecting activity, although the gold claim figures are rather surprising in view of the well-known unfavorable conditions for mining gold. Figure I is a graph showing the trends of the numbers of claims staked in each Division for the four years in question. It is interesting to note that between the two peak years of 1954 and 1955, large decreases in the Third and Fourth Divisions were equalled by increases in the First and Second to keep the total nearly constant. In 1956, the First and Fourth Division stakings remained nearly the same while drops occurred in the Second and Third Divisions. As some of the claim records are slow in being sent to the TDM at Juneau, the 1956 total will increase slightly from its standing at the time of compiling this report. Reported assessment work for the four years averaged around four times the number of claims that were staked. This is due to the large blocks of gold placer claims held in the upper three Divisions. In the First Division alone, stakings ex-

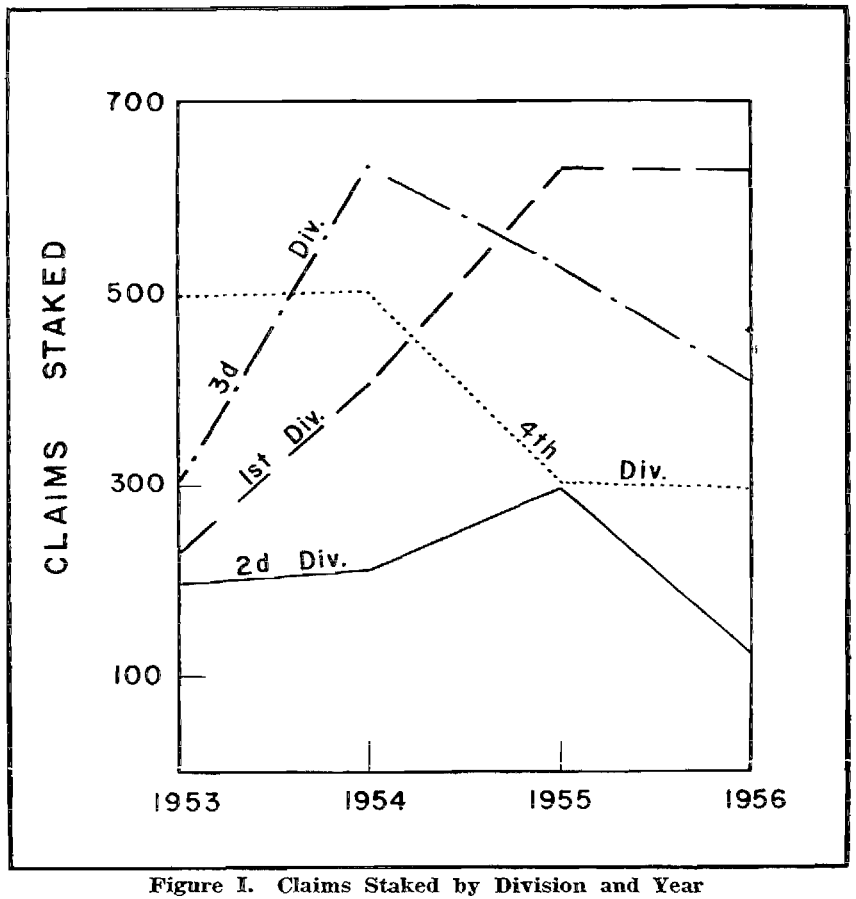

Figure I. Claims Staked by Division and Year

ceeded the number of claims for which assessment work was reported each year. Assessment work was reported for Alaska for the four years as follows in chronological order: 5,759, 6,162, 6,366, and 5,943. In considering these figures, it should be borne in mind that assessment work affidavits are not required by law and there is no way at present of determining how much assessment work is being done of which there is no record.

Mining companies were still searching for qualified Alaskan prospectors to work for them in the field, and a few grubstaking arrangements continued to be made. Geophysical exploration, particularly in the air, increased during the biennium with several large aerial magnetometer surveys having been made for various companies. Aerial prospecting with radiometric detectors, as with

ground radiometric prospecting, reached a high peak in 1955, then subsided in 1956. Exploration men or parties for a number of large companies made extensive investigations in a number of districts, an activity which will probably continue, depending on several factors. A number of large mining companies, American and Canadian, have spent considerable time in the Territorial Department of Mines Juneau office studying the files of reports on Alaskan prospects and properties with a view toward learning of possible mineral deposits that would appear sufficiently favorable to warrant the investment of money in further exploration.

Particular attention was again devoted to the search for iron and copper deposits throughout Southeastern Alaska, but this search by several companies was extended this biennium to the Prince William Sound District, Copper River Region, and in one case to the Seward Peninsula. Nickel, uranium, lead and zinc have also been items of chief interest, but limestone, molybdenum, gypsum, barite, and sulfur from pyrite have also received their share of attention. Approximately three-quarters of a million dollars was spent in Southeastern Alaska alone in 1956 by large mining companies.

One company in Southeastern Alaska had drilling projects at several locations in 1955, has acquired many limestone claims, and has set up an experimental pilot plant at one iron deposit. Many more claims have been staked on known iron deposits, and at least one large new iron discovery is expected. Two companies were busy in 1956 testing different parts of the Klukwan iron deposit. Bornite Copper Corporation and Northwest Ventures, Ltd., have been conducting an ambitious drilling program on a copper deposit at Gravina Island near Ketchikan. Mentioned earlier are the two uranium properties under investigation by drilling in this district. The two companies are Climax Molybdenum Company and Union Carbide Nuclear. Other companies active in the First Division are U. S. Steel, Owen Ore Company of Duluth, B. C. Mica, Ltd. on a mica property on Sitklan Island, Utah Company of the Americas, American Metal Company, and several others.

As predicted by TDM earlier, expansion of the logging industry in Southeastern Alaska has resulted in the incidental discoveries of new mineral showings. In the Hollis area several prospects have

been staked upon outcrops uncovered by new road construction. At least two attempts are now being made to exploit some of these new claims for their gold content, but it is considered too early to know the potential value or importance of these discoveries.

A recent flurry of beach placer claim staking along the northeast coast of the Gulf of Alaska was noted.

Contract diamond core drilling is increasing in Southeastern Alaska. This is mostly by one large drilling company. One or two private groups with small prospect drills are engaged in the same activity and other groups are purchasing drills for work on their own prospects. A number of groups throughout Alaska rented the TDM prospect drills for exploration.

Underground exploration continues at the Funter Bay nickel-copper property of Admiralty-Alaska Gold Mining Company.

The Sinuk River iron deposits in the Second Division were investigated and some claims were staked.

In the Third Division, Strandberg Mines, Inc. continued their exploration of copper deposits in the Talkeetna Mountains and investigated other possibilities. After long urging by the TDM, a number of companies started investigating the old Strelna area west of McCarthy all at once in 1956. Bear Creek Mining Company, Kennecott subsidiary, continued its investigations in the Nizina District. Geophysical investigations were made in the Prince William Sound District by two companies. Drilling continued on Latouche Island by Northern Pyrites in the outlining of a sulfide body. This venture was within a hairsbreadth of being cancelled after 1955 because of excessive wage rates. Sporadic prospecting of chromite deposits continued by two or three groups near Seldovia in the Red Mountain area. In this Division alone, a moderate increase in gold placer prospecting activity was noted in 1956. An Anchorage group known as Grubstakers, Inc. staked the Canyon Creek molybdenum prospect in the Nizina District which has been abandoned for many years. They hope to interest a mining company in the property. Moneta Porcupine Mines, Ltd. took an option on the mercury property of Wren, Waskey, and Wolf near Dillingham, and are engaged in development work there. Placer and lode gold prospecting and exploration increased moderately at properties along the Seward Highway on the Kenai Peninsula.

In the Fourth Division, a further increase of prospecting for cinnabar (mercury) deposits in the Kuskokwim River country was noted. The continued high price of mercury and the successful operation of the Red Devil Mine are stimulating this activity. Placer prospecting continued on a small scale throughout the biennium. Most work of this nature was done by individual operators attempting to find extensions of known paystreaks or "side pay" adjacent to known paystreaks. Little placer prospecting was done outside of the old established placer mining districts. Some interest was shown in lode deposits of the Fourth Division by a few of the larger mining companies, but in general those companies tend to concentrate their efforts in the coastal regions where transportation costs are lower. Development and exploration were carried on at a few lode gold properties.

Precious Metals

Lode Mining

Alaska's lode gold mining has dwindled to almost nothing. In this whole Territory, known the world over for its huge lowgrade hardrock gold mines and smaller highgrade operations that once produced fabulous amounts of gold, there is now hardly a single steadily-operating lode gold mine. The reasons for this situation are well known and are as follows: greatly increased costs in taxes, equipment, and supplies; undependability and high cost of labor; and the fixed price of gold. Very few of the many known gold lodes that exist in the Territory can be profitably mined under the present economic conditions.

In the First Division there was no significant gold lode production. Lode gold prospects being actively developed are those of Robert Novatney at Helm Bay in the Ketchikan District and Herman Kloss and Jack Davis at Sunset Cove in the Juneau District. The owners of the Mount Parker Mines (formerly the Leroy Mine) are planning some exploration work to determine if the mine can be reopened. A maintenance crew is still kept at the Alaska Juneau Mine, but the maintenance is progressively falling

further behind the deterioration from natural causes that work against a shut-down mine and its equipment. A few companies, chiefly Canadian, have shown a slightly increased interest in gold lode properties lately.

In the Second Division, the reported plans did not materialize into any further efforts at reopening the Big Hurrah Mine.

In the famous Willow Creek District of the Third Division, Brown and Renshaw operated the Gold Cord Mine intermittently, and one or two other properties were mined a little from time to time. The old John Dryer Mine along the Seward Highway was operated during the biennium with a crew of 4 or 5 men. Several other of the old hardrock properties in this district were being explored or prospected in varying degrees. This represents a rather recent increase of interest in this area.

The Summit Claim in the Chandalar District of the Fourth Division is being developed by Ed Toussaint, and a mill is being installed there for future production. Strandberg Mines, Inc. carried on with the development of the Nixon Fork Mine in the McGrath District.

Placer Mining

Placer gold mining is caught in the same ever-tightening squeeze between increasing costs and the fixed price for gold as the lode mining, and although it is also decreasing, it has not diminished, fortunately, to the status of lode mining. Gold production in Alaska, which is practically all by placer mining, decreased from $8,725,290 in 1955 to $7,150,500 (estimated) in 1956. This is a drop of 18% following a period of 5 years in which gold production was relatively stable in spite of decreasing numbers of operations. As stated in earlier reports, the placer operators that manage to stay solvent have by necessity become more efficiently mechanized to move larger yardages of gravel with fewer personnel each year. So the total production has not suffered greatly because of fewer operations. The sudden production drop of 1956 was probably due to the shortened season (late spring and early fall) which cut down the usual digging time for the dredges of the larger producers. Dredging produced 78% of the total gold in 1955.

Placer operators continue to have difficulty in securing sufficient and dependable labor for the wages they are able to pay because of the competition of the high-paying defense and road construction projects. This condition was improving for a brief spell, but is now growing worse again, according to reports. Defense construction appears to be again accelerating.

Some of the operations and conditions of placer mining will be mentioned here, and a complete list of operations active during the biennium is included at the end of the report.

First Division:

Gold placer mining in Southeastern Alaska was limited to a very few small operations. Stanton Price continued his novel operation at Windham Bay, which runs itself a large portion of the time. Howard Hayes did a little more placering with a sluice box setup in the Alaska Juneau mill tailings in 1955. Groups of beach placer claims were being staked late in the biennium that may be valuable for base metals and other minerals as well as gold, silver, and possibly platinum.

Second Division:

Council District: The dredging outfit on the Niukluk River formerly operated by Alaska Placer Company and then Coplin Consolidated Enterprises was in turn taken over by the Northern Mining Company and run by them during the biennium. Bill Munz operated a small dredge on Eldorado Creek, and the few other small operations remained about as before.

Fairhaven District: The Casa de Paga Gold Company ceased operations, and Grant Nelson purchased the dredging equipment and put it into operation in 1956. He plans to continue dredging there on the Inmachuk River in 1957. Havenstrite continued operations as usual, as did Jack Hogendorn.

Kiana District: Only one small hand operation was reported for this district.

Kougarok District: Kougarok miners had an unusually dry season in 1956 which cut down sluicing time and prevented one or two operators from sluicing at all. The miners in this district

have been operating on war surplus fuel oil, but the supply is now nearly exhausted. The Bureau of Public Roads hopes to have a road completed from Nome into the district by the fall of 1957 to help relieve the situation. Trucking the oil in will be cheaper than shipping by air or cat train.

A new group called the Lucky Syndicate purchased the old Gold Dust Mining Company dredge on the Kougarok River and was preparing late in 1956 to put it into operation in 1957. The dredge has been idle for several years. With the exception of the water shortage, the other Kougarok District operators worked about as usual.

Koyuk District: Patrick Bliss on Sweepstakes Creek is reported to be the only regular operator remaining in this district at the close of the biennium.

Marshall District: Only one fully active operator remains in this district also. Eugene Tetinek has a nonfloat outfit on Willow Creek.

Nome District: The U. S. Smelting, Refining, and Mining Company brought in a construction crew of 70 men from Yuba Manufacturing Company to build a new dredge which is called No. 6. The machinery from the old No. 3 which capsized a few years ago was utilized. They have been digging with two dredges but will have three in operation in 1957. Kougarok Freight and Mining Company continued to operate their homemade dredge on Buster Creek. Lee Brothers dredged on Solomon River in 1956 only. Herb Engstrom mined again on Basin Creek.

Port Clarence District: Mining activity has practically ceased in this once active district.

Shungnak District: C. E. "El" Stout with a bulldozer operation on Dahl Creek is the only placer gold operator remaining in this district.

Third Division:

Yentna District: This is the only district in the Third Division which is still a fairly active placer camp. Several operations are steady producers, though the largest producer, Collinsville Mines on Mills and Twin Creeks, finally reached the end of its paystreak

late in 1956 and had to shut down. Some bench prospecting was being done there at the close of the season. The Alaska Exploration and Mining Company is still mining on Bird Creek with a hydraulic outfit. The Nugget Creek holdings of Beaver and Stephens have been consolidated into one operation with those of Phillip and Rebecca Brandl and the Nugget Creek Mining Company. Some of the other older operations have changed hands, but the total number remains about the same.

Chistochina District: A new operation was started on Slate Creek in 1956—that of Hobb Enterprises of Anchorage who moved in mechanical equipment early in the year. Lewis Elmer still mines in a small way on Slate Creek and Mines Ventures is still making preparations for mining their property on the Middle Fork of the Chistochina. Other operations in the district consisted of only small-scale hand activities.

Hope District: This district on the Kenai Peninsula was once a fairly large producer of placer gold, but little mining has been done there for many years. Interest in the district has increased during the biennium, however. Louis Shell and Edward Seaman had hydraulic operations on Canyon and Fresno Creeks respectively. L. McGee is making placer preparations on Canyon Creek. O'Brien and Dunsmire are still mining their placer drift diggings at Surprise Creek.

Kodiak District: Formerly the scene of beach placering from time to time, no activity is evident at present.

Nelchina District: Only one operation was active during the biennium—that of Belanger and Cameron on Albert Creek.

Nizina District: Walter Holmes operated a one-man hydraulic setup as usual.

Valdez Creek District: Interest in this district has increased to a moderate extent. Minor Roop has started prospecting Valdez Creek in preparation to mining there, and the Bott brothers have a nonfloat operation on that creek. Several others are reported to be prospecting—both placer and lode—in the hopes of starting operations.

Yakataga District: Two small beach placer operations are reported to be still active on the Yakataga beach.

Fourth Division:

Gold placer mining continued at about the same rate as in the preceding biennium; the number of old operations closing down was offset by the number of new operations starting. Platinum was produced from placers in the Goodnews Bay District, and mercury and tungsten were produced from placers in conjunction with gold mining in the Aniak District.

Fairbanks District: The Fairbanks District remains the highest gold producing district in Alaska because of the large-scale operations of the Fairbanks Branch of the U. S. Smelting, Refining, and Mining Company. It operated six dredges in the Fairbanks District throughout the biennium, and, in addition to the dredging, did preparatory work at two other camps. Early in 1955 Dredge No. 5 was moved from Eldorado Creek to Dome Creek. The Brinker-Johnson dredge on Caribou Creek was operated by a partnership of former employees of the Brinker-Johnson Company. Other operations in the District continued as in the preceding biennium.

Aniak District: The New York-Alaska Dredging Company continued to mine with three dredges and a dragline. Other operations continued as in the preceding biennium.

Bonnifield District: Only one part-time operator was active in the Bonnifield District during the biennium.

Chandalar District: The Chandalar Mining Company continued to be the only mechanized placer mining operation in the district. Other operations continued as before.

Circle District: The Circle District continues to be one of the more active placer mining districts in the Fourth Division. The Circle Dredging Company did not mine in 1956. Other operations continued as in the preceding biennium.

Eagle District: There was only one active placer mining operation in the Eagle District during the biennium.

Fortymile District: There were fourteen active mining operations in the Fortymile District in 1956. The U. S. Smelting, Refining, and Mining Company continued to do preparatory work on its dredging ground on Mosquito Fork. Myron Crozier started mining on O'Brien Creek. Robert McCombe started stripping on the South Fork of the Fortymile River.

Goodnews Bay District: The Goodnews Bay Mining Company continued mining platinum, and other operators continued as in the preceding biennium.

Hot Springs District: Oscar Enstrom mined on American Creek in 1956. Tony Lanning mined on Omega Creek in 1955 and part of 1956; during the last part of the 1956 season he mined on Thanksgiving Creek. Larsen and Suckling did not mine during the biennium. Other operations remained the same.

Hughes District: In 1955 the U. S. Smelting, Refining, and Mining Company moved a dredge from Livengood to the Hughes District by way of the Tanana, Yukon, and Koyukuk Rivers. In the late winter and early spring of 1956 the dredge was moved overland the last 25 miles of its journey. In the summer of 1956 the dredge was reassembled, and it will be ready to start mining in 1957. Strandberg Mines, Inc. mined throughout the biennium on Indian River.

Iditarod District: New operations reported during the biennium were the Otter Dredging Company on Otter Creek and W. A. Williams on a tributary to Otter Creek. Other operations continued as in the preceding biennium.

Innoko District: There were ten active mining operations in the Innoko District. Tom Wollard, formerly on lower Ganes Creek, did not mine during the biennium. Other operations continued as before.

Kantishna District: Burnette and Hunter continued mining on Crooked Creek, and Paul Omlin was reported to be mining on Moose Creek in 1956.

Koyukuk District: The Slate Creek Mining Company on upper Slate Creek did not mine during the biennium. The A and S Mining Company on Mascot Creek did not mine in 1956, nor did Ulen and Pingalo on Nolan Creek. Prospectors, Inc. did some work on Myrtle Creek and also on Joe Ulen's ground on Nolan Creek. Uotila and MacIntosh started a new mining operation on Emma Creek in 1956. Joe Tauber, who was on Myrtle Creek in 1954, did

not mine during the biennium. Other operations continued as before.

McGrath District: Leonard Zaiser's mining operation on Birch Gulch was the only one reported in the McGrath District during the biennium.

Melozitna District: The Iditarod Operating Company continued to be the only active operator in the Melozitna District.

Rampart District: Swanson Brothers mined on Hunter Creek in 1955, then sold to William Thomas, formerly of Kobuk Mines, who mined there in 1956. Other operations in the district remained the same as in the preceding biennium.

Ruby District: Jack Koski started preparatory work on Trail Creek in 1955 and continued throughout the biennium. Other operations remained the same.

Tolovana District: Yukon Placers, Inc. started mining on Livengood Creek on ground owned by Livengood Placers, Inc. in 1955 and continued mining through 1956. Sleeper and McCharles were reported to be mining on Buckeye Creek in 1956. Other operations remained the same as in the preceding biennium.

Coal

Production of coal for the 1955-1956 biennium amounted to 1,337,426 tons. The production came from eight underground and strip operations and was a 12% decrease from the previous biennium. A list of the coal operators active in the Territory during the biennium may be found in the tabulation at the end of this report.

Matanuska Field:

The Evan Jones Coal Company continued to mine both strip and underground coal, and operated the heavy-media coal cleaning plant throughout the biennium. The greater proportion of their production was from the strip mine which is being operated under contract.

The Mrak Coal Company continued to operate throughout the biennium and installed their own washing plant in August of 1956.

The Pioneer Coal Mine operated on a small scale throughout the biennium at several locations on their lease.

Some preliminary work was done on a new area under permit at Chickaloon from which no production resulted.

Kenai Field:

Three individuals operating on permits intermittently produced a few tons of coal throughout the biennium for local consumption in Homer.

Point Barrow Field:

Coal for use by the Eskimo inhabitants in the vicinity of Point Barrow continued to be mined at the rate of 1,000 tons per year by the Alaska Native Service from the Meade River Mine.

Nenana Field:

Suntrana Mining Company operated throughout the entire biennium on the property formerly owned by Healy River Coal Company. Operations during the early part of 1956 were on a somewhat limited scale due to lack of a military contract. On two occasions during the biennium, their underground fire broke out and had to be resealed. This fire has been confined to No. 1 bed, and on one occasion some coal and mine rail were lost.

Usibelli Coal Mine continued its stripping operations and also its somewhat limited underground phase. A heavy-media coal cleaning plant was used throughout the biennium when weather conditions permitted.

Arctic Coal Company mined on a limited basis from their lease on Lignite Creek. In 1955 their production was moved across the Nenana River on the ice. In 1956 a tramway was completed across this river for delivery of the coal at a railroad siding.

Cripple Creek Coal Company operated only during 1955, as no military contracts were awarded to this company in 1956.

Broad Pass Field:

W. E. Dunkle continued some development of known coal beds in this field throughout the biennium.

The present production capacity of currently established coal mine installations in the Territory is approximately 6,000 tons per day. This capacity is well above the apparent demand and it will be necessary for those operators who intend to remain in business to conduct an efficient operation producing a clean product, if they intend to sell this product on the highly competitive market.

The United States Air Force, in a recent application for a new land withdrawal in the Anchorage area, has indicated a willingness to release most of a current withdrawn area covering the Beluga Coal Field. The TDM feels that the Beluga area contains the most likely source of cheap fuel which could provide low-cost electrical energy for the Anchorage area for many years to come. This opinion is based on a study of the cost of present-day coal-burning generating plants with the idea that such a plant would be built at the coal deposit and the generated energy transmitted to the Anchorage area.

Coal Miners Examining Board

The Territorial Coal Miners Examining Board, established by Chapter 21, SLA 1953, did not meet during the biennium. The Board is to meet early in 1957 to examine the only four applicants who have applied for certification.

Base Metals

Alaska has known and potential deposits of many metals which are in great demand, and they should be developed as secure sources of supply which are safe in the changing world conditions and also as a means of contributing toward a basic and self-sufficient economy for the Territory. The most important metal, and one which is not found in significant quantities elsewhere in the world except where it is within easy reach of the Soviet or Soviet-dominated countries, is tin. Tin is followed in approximate order of importance by nickel, copper, iron, mercury, chromium, tungsten, molybdenum, lead, zinc, and antimony.

Tin is found in placer deposits in many locations throughout Alaska. The area of most importance, however, is the Seward Peninsula, where considerable placer mining has been done strictly for the tin content of the gravels, and lode tin deposits are common. However, because of economic conditions, all placer tin mining has been at a standstill since 1953, and the only significant lode operation that has ever existed under the U. S. flag was forced to close late in 1955. This was the U. S. Tin Corporation mine at Lost River, 90 miles northwest of Nome, which came into being with government help in 1952 and produced steadily through 1954 and most of 1955. It produced 321 tons of tin concentrates in 1954 and 173 in 1955. This mine was something of a test case, and if it could have been operated until the problems were ironed out, sufficient knowledge could probably have been acquired on lode tin mining in this difficult area to make possible the mining of some of the other tin lodes in the district. By this, the nation would benefit strategically and the Territory economically.

The Zenda Gold Mining Company, which outlined large placer tin reserves with a drilling program in 1952 and 1953, is still inactive. The proven reserves make an attractive-appearing mining possibility, but the company is idle and its plans for production, if any, are not known.

Placer tin has also been found to exist in the Hot Springs District, Melozitna District, Fairbanks District, and others. Several years ago, a piece of tin "float" was found on the beach in St. James Bay, Lynn Canal, Southeastern Alaska, which indicates a possible source of lode tin somewhere in that district.

Nickel, as found in the deposits of Southeastern Alaska, is generally associated with copper, and occasionally cobalt. The more important occurrences are found as disseminated sulphide mineralization in a norite stock. In some cases, concentrations of the sulphide minerals—pentlandite, chalcopyrite and pyrrhotite—are found in relatively small pods. An interesting belt of nickel prospects, which the Department of Mines has long advocated as worthy of intensive exploration, extends from Yakobi Island south along the west coasts of Chichagof and Baranof Islands to Snipe Bay.

The Admiralty-Alaska Gold Mining Company is still exploring its much publicized deposit at Funter Bay on Admiralty Island. The ore body as developed so far is very promising, averaging around 1% nickel, and 1% copper. The work has been partly financed by DMEA participating loans, but is now proceeding at an

accelerated pace on private funds. Underground drifting equipment for work on two lower levels has been purchased and about 5,000 feet of drifts is contemplated with several thousand more feet of diamond drilling. A second aerial magnetometer survey was flown over the property and adjacent area during the biennium. Applications for patents on many additional claims have been filed.

The large Yakobi Island deposits that were staked in 1952 by Canadian interests are still in dispute, although the Appellate Court in San Francisco decided in favor of the Canadians in support of the District Court. The claims have been staked again by a third party and the matter is again in litigation. In spite of all this, there are indications that there may still be some exploration work done on the deposits in the near future.

Other interesting nickel deposits in Alaska include the Spirit Mountain occurrence in the Copper River country, and a prospect in the Salcha River area held by Dean Ricks.

Copper is the most widely sought base metal in Alaska today. The production of this metal has a long history in the Territory, and the time is near, depending on economic conditions, when copper will once again be produced here. From the first years of the century when copper was mined in Prince William Sound and on Prince of Wales Island in the Ketchikan District until the famous Kennecott Mine in the Nizina District was forced to close in 1938, Alaska was an important producer of copper. The Prince William Sound and the Nizina Districts are still the most promising areas, but copper may be produced in either the Ketchikan District or the Valdez Creek District first. Copper is also found in the Chistochina, Chisana, Bristol Bay, Alaska Peninsula, Willow Creek, Yentna, Kodiak, Seward Peninsula, and many other districts about the Territory. Mining companies are interested in obtaining large lowgrade deposits as well as higher grade ore. Present-day operators are very pleased with deposits running 30 or 40 feet in width and several hundred feet in length and assaying 2 to 3%, even though found some distance from tidewater.

Probably the most active single copper exploration project during the biennium was that of the Alaska Copper Mines, Inc. (Alaska Freight Lines) at the Kathleen-Margaret property on the

Maclaren River in the Valdez Creek District. Future plans for this property are not known.

The Moose Creek copper show north of Palmer, over which a controversy arose in the previous biennium, is now clear with regard to title. It has not yet been taken up by a company, at last report, although the TDM considers it a favorable prospect. After long urging by the TDM, a few companies decided at the same time to investigate the possibilities of the old prospects in the Strelna area in the Chistochina District, and set up camps there in 1956. Bear Creek Mining Company (Kennecott subsidiary) continued to investigate the McCarthy country throughout the biennium. Considerable prospecting was done around many copper prospects in Southeastern Alaska, mostly on Prince of Wales Island in the Ketchikan District. Large areas were covered in Alaska general by aerial magnetometer surveys in the search for clues to copper and other mineralization. Another big Canadian copper strike has been made just across the border. This one is up the Stikine a short distance from Wrangell.

Iron—With the gradual depletion of iron ore reserves in the United States and the movement of the steel industry toward the West Coast, the search for iron ore increased tremendously during the previous biennium and continued to increase during this biennium. The search has been confined largely to Southeastern Alaska so far because of the need for cheap transportation for that type of material. Among the favorable bodies of magnetite are those at Klukwan, Port Snettisham, Union Bay, Duke Island, and several on Prince of Wales Island. These deposits are all too low-grade to be shipped without beneficiation or concentration, however, and considering the low unit-price of iron ores, beneficiation will probably be too expensive until large amounts of low-cost electrical power are made available locally. To be considered also for the future is the probability of electrical smelting furnaces being built in Alaska in connection with the various proposed large hydroelectric developments.

The Klukwan deposit, owned by the Alaska Iron Company, is leased to Quebec Metallurgical Industries, a Canadian subsidiary of Ventures, Ltd. A local incorporation, named the Klukwan Iron Ore Corporation, has been effected to handle their business in

Alaska. Considerable exploration and testing has been done at Klukwan during the biennium by two other companies in addition to QMI. Columbia Iron Mining Company (U. S. Steel subsidiary) put a pilot mill on the property in 1956 for testing and concentrating the placer material, and shipped 1,500 tons of ore south for further metallurgical testing. J. R. Simplot Company of Boise, Idaho, holds a few of the key claims on the lode part of the property, and spent the season of 1956 in exploratory drilling.

Columbia Iron Mining Company explored by drilling in 1955 the iron deposits at Union Bay on the Cleveland Peninsula and Duke Island. They also investigated a number of other iron occurrences during the biennium. Owen Ore Company of Duluth, Minnesota, also investigated a number of iron deposits, did some exploratory work on one of them, and staked a group of claims adjacent to the Pekovich holdings at Port Snettisham. Utah Company of the Americas, which has an iron mining operation in British Columbia, is also seriously investigating iron possibilities in Alaska.

Mercury, known more popularly as quicksilver, has caused much activity in the cinnabar belt along the Kuskokwim River in the Aniak District. The DeCoursey Mountain Mining Company, Anchorage, with DMEA help, put the Red Devil Mine into production in 1953, and with the record high price of mercury in 1954, was doing very well when a disastrous fire late in the year closed the operation down. Brewis and White, Ltd. of Toronto purchased the property in 1955, rehabilitated it, and put it back into operation in early 1956 with a modernized plant. Production is now 16 to 18 flasks per day (76 pounds to the flask), and the flasks are flown from the mine to Anchorage by plane. Exploration work at the DeCoursey Mountain prospect has been carried on with a view toward putting that prospect into production in the near future.

Exploratory work has also been carried on at the Parks prospect and the old Alice and Bessie Mine in the same district. Several other independent prospectors have been busy in this district as well as neighboring districts hunting for good mercury shows. Russel Schaefer produced mercury at his property on Cinnabar Creek. Moneta Porcupine Mines, Ltd., is developing the Wren, Waskey & Wolf mercury property at Marsh Mountain near Dillingham and may get into production in 1957.

Chromium comes from the mineral chromite, deposits of which are found near Seldovia in the Homer District on the Kenai Peninsula, at Red Bluff Bay in the Chichagof District, and near Eklutna between Anchorage and Palmer. Only the Homer District deposits appear to have commercial importance at present. The Kenai Chrome Company has been mining the Star No. 4 ore body on Red Mountain for four summers and now has a well-established operation, although seasonal. Kenai Chrome is the only Alaskan government-assisted venture thus far to pay off its obligations in full from production. Crude ore has been shipped so far, but construction of a mill was started late in 1956 to enable the company to mine a lower grade ore and beneficiate it for shipment. The mill was scheduled for completion before this winter, but unusually heavy fall snows stopped construction early. It is planned to stockpile sufficient ore in the summers to keep the mill running throughout the winters when the heavy snows prevent the haulage of the ore down the mountain side.

Exploratory activity was carried on at the old Chrome Queen Mine in 1955 by the Alaska Chrome Company, C. A. Sherman, President. This activity was short-lived and the company has gone bankrupt. Alaska Oil and Minerals Corporation has the property now, but its plans are not known. The Chrome Queen was a producer during the war and still has ore reserves. Seldovia Mining Company and Bill Lyons each did some surface prospecting work in the Red Mountain area during the biennium.

Tungsten is found throughout Alaska, usually in the form of scheelite. There was no tungsten shipped from the Territory during the biennium, but several hundred tons of scheelite ore were mined and stockpiled at Gilmore Dome in the course of the DMEA-supported exploration work in progress there. This is in the Fairbanks District and the work is being done by Alaska Metals Mining Company. A small mill was built there in 1956, which should go into production in 1957. Development work was done on the Spruce Hen prospect on Tungsten Hill in the same district. Rehabilitation work is being done by Hyder Mines, Inc. at the Riverside Mine in the Hyder District. Scheelite was recovered as a by-product from a few placer operations about the Territory. Kodiak Exploration Company did some work on a scheelite prospect on Kodiak Island.

Molybdenum is another important metal that is found in nearly every section of Alaska, two or three deposits of which may have commercial importance. The old Canyon Creek prospect in the Nizina District was finally staked in 1956 by Grubstakers, Inc., of Anchorage. They report a very promising show and hope to interest a mining company in taking it over.

Lead and **zinc** are also found in practically all parts of Alaska, but the low prices at present will not pay the cost of mining and shipping. Pure lead or zinc will not bring sufficient returns to pay the shipping costs alone from interior Alaska or the Seward Peninsula. The main hope for lead and zinc mining is the deposits that carry associated metals, such as silver or copper, in sufficient quantity to "sweeten" the ore considerably. The Mt. Eielson zinc-lead property in the Kantishna, now held by Harold Herning of Fairbanks, has some possibilities. The lead-zinc properties in the area of Groundhog Basin east of Wrangell may some day see production. A trial shipment of lead-silver ore was made by Fred Wackwitz from a property near Fox in the Fairbanks District, and some lead was produced as a by-product of a placer concentrate. Some interest is still being shown in the old Independence lead-silver mine on the Seward Peninsula, and Neal W. "Willie" Foster has made a new lead discovery in the same district.

Antimony was produced from one mine in Alaska in 1956. Earl Pilgrim made two shipments of highgrade antimony ore from the Stampede Mine in the Kantishna, but the returns hardly paid the freight bill. He hauled the ore by tractor train from the mine to the railroad, a distance of about fifty miles. The long-continued depressed condition of the antimony market has resulted in the virtual cessation of antimony prospecting or exploratory work. With antimony deposits in all sections of Alaska, a good market would doubtless create many small antimony mining enterprises. Native antimony, a rare occurrence, is found in the K & D Lode at Sunset Cove in the Petersburg District owned by Herman Kloss.

Radioactives

The biggest mining news of the biennium was that commercial-grade uranium-bearing material was finally found in Alaska. The discovery was made early in 1955 by Don and Jan

Ross of Ketchikan, a husband and wife team, flying aerial reconnaissance with a Piper Cub and using a Nucliometer. Acting on a strong aerial anomaly, the Rosses landed and staked the first claim. Another husband and wife team associated in the venture, Kelly and Judy Adams, were flown to the area near Kendrick Bay, on Prince of Wales Island, where they spent a number of days setting up a camp, conducting radiometric ground surveys, staking claims, etc. At the request of the discoverers, Territorial Department of Mines personnel investigated the area and found it to be very promising. The discoverers then contacted Climax Molybdenum Company, who sent geologists to the property, and on their report, a contract was signed for the exploration and possible mining of the property. Test drilling of the property started later in the year and continued on into 1956. A suitable ore body has apparently been blocked out, but mining and shipment depend on the progress and characteristics of the uranium mill now under construction at Spokane, Washington.

Having gotten off to a good start in 1954, uranium prospecting in the air and on the ground reached a high peak in Alaska in 1955, and has subsided in 1956. Most ventures were created by groups financing small planes and pilots to carefully cover sections of the country with high powered Geiger counters or scintillation detectors. Upon finding good indications from the air, ground parties would go in and check it out. Large numbers of groups were involved in this type of activity, and TDM personnel were besieged on all sides for information and advice on uranium reconnaissance and prospecting. Many flights were made by the TDM with parties for the purpose of instruction on proper aerial radiometric procedures, and much time was spent conferring with aerial and ground prospectors on their problems of what steps to follow after the preliminary work revealed promising indications. Field examinations were made of radioactive finds where requested by the holders and when considered justified.

In the area of the first important discovery, other finds have been made and many claims staked. The area is on the slopes of Bokan Mountain between Kendrick Bay and Moira Sound. The second best property is the I & L discovered by Les Hollenbeak of Ketchikan. Union Carbide Nuclear took an option on this prospect in early 1956 and spent the summer stripping and drilling there after construction of a tractor trail to the place.

Late in 1955 a discovery was made of a prospect north of Juneau on the west side of Lynn Canal which indicates good possibilities, though very little exploratory work has been done. In early 1956 a discovery was made adjacent to Skagway, but expected further developments there have not materialized.

Other than one or two false alarms setting off small "rushes," no particular items from the Interior were newsworthy during the biennium. A property on Seward Peninsula was drilled, but results were not up to expectations. Work has continued on some radioactive beach sands along the Gulf of Alaska.

Nonmetallics

Among the most important nonmetallic minerals are mica, asbestos, and sulfur. The demand is high for all three, though the sulfur demand seems to be slipping, and deposits of each are found in Alaska. Also in the Territory are deposits of jade, pumice, graphite, building stone of many types, silica, rare earths, gypsum, and unlimited reserves of high-calcium limestone. Other deposits include garnet, marble, fluorite, calcite, kyanite, and bentonite. Interest is growing in gem stones and suitable lapidary materials. Jade cutting is increasing, and the market is getting better for jewelry materials from Alaska.

Mica deposits on Sitklan Island south of Ketchikan are being developed by the B. C. Mica Company of Vancouver, B. C., and may be put into production in 1957. A favorable deposit is reported on the Seward Peninsula, and mica also exists in other locations about the Territory. The market is good and prices are high, particularly for the strategic grades, but they must be sold to private purchasers because the GSA mica purchasing program is limited to the 48 States.

Asbestos deposits in the Territory are fairly wide spread, but the asbestos on the Kobuk River is the best known so far. Several tons of Kobuk asbestos were shipped during the war when shipping cost was no deterrent, but since then there has been no production because of the remoteness of the area. A deposit on Bear Creek, Admiralty Island, has been known for many years and is held by Harold DeRoux of Juneau. More development work needs to be done to determne the prospect's worth. A large deposit is

reported to exist north of the Yukon River in the vicinity of Rampart.

Sulfur—The Territory's chief hopes for sulfur production lie in its myriad pyrite deposits, although the volcanic sulfur deposits along the Alaska Peninsula and Aleutian Islands have been investigated as possibilities. With the advent of new metallurgical processes, which allow the iron in pyrite to be saved as well as the sulfur, pyrite deposits have taken on a definite increase of importance. Chalcopyrite is even better, if in sufficiently large quantity, because copper can then also be produced in addition to the sulfur and iron. Any sulfide deposit at least 20 feet wide by 100 feet long and approaching 70% pyrite (total added sulfur and iron content) is of possible commercial value. Northern Pyrites Company is paying $170,000 for an option on two sulfide deposits on Latouche Island. Geophysical exploration was completed on the deposits by them in 1954, and the seasons of 1955 and 1956 have been spent in drilling the deposits. Results thus far are not known.

Jade and gem stones—Jade is valuable for lapidary and jewelry work and sells well when cut and polished. The only known Alaskan source is along the Kobuk River in the Shungnak District. Gene Joiner's Empire Jade Company has been making small shipments from there, sending part of the material to Germany for cutting and polishing and having part of it carved in Alaska. The product is distributed to the U. S. as well as throughout the Territory.

Norton's Gem Shop in Seward and the Alaska Lapidary Service at Baranof are two outlets for Alaskan gem stones and minerals in addition to jade.

During the summer of 1956 a discovery was made near Craig of an excellent material for lapidary use, but the amount found was very limited. Further investigation is being made in the hope that it can be found in greater abundance. It is a chalcedonic silica, of a type sometimes referred to as "Egyptian Jasper." The potential of the material was first recognized by the TDM office in Ketchikan. That office prepared test cuts and the first finished stones to prove that the material was qualified for commercial acceptance. Later shipments were sent to the states for cutting,

and the finished and mouned stones are now being sold through a jewelry store in Ketchikan.

Pumice is a light volcanic mineral that can be used to an advantage in lightweight concrete aggregates. Pumice has been mined on Augustine Island for use in the Anchorage area. Legislation has made it legal to mine this material within Katmai National Monument. A pumice deposit exists on Behm Canal, near Ketchikan. Certain types of shale which exist in the Anchorage and Matanuska areas can also be used for lightweight aggregates by first bloating them.

Gypsum deposits are well known in the vicinity of Iyoukeen Cove, Chichagof Island. Held by Harold DeRoux of Juneau, these deposits are considered fairly extensive and some interest in them is aroused from time to time. The extremely low unit price for gypsum has prevented any real activity during the biennium, however.

Limestone is the country rock for a large share of Southeastern Alaska, much of which is high-calcium limestone, and as such is suitable for use as a flux in iron smelting and also can be used in the processing of aluminum. U. S. Steel, in its quest for iron ore in Alaska, has been staking its legal amount of limestone claims. Limestone has also been staked in the vicinity of Haines. A new company took over the Alcoa limestone quarry at Edna Bay, Kosciusko Island, in late 1956. Plans were announced for quarrying and crushing at the site, then shipping to a lime plant to be constructed near Vancouver, Washington.

Oil and Gas

Exploration for oil and gas by private enterprise in Alaska has continued at an ever increasing rate during the past biennium. Applications for oil and gas leases on more than five million acres have been received by the Bureau of Land Management offices at Anchorage and Fairbanks. A total of ten major oil companies and many smaller ones have been active in conducting reconnaissance, filing lease applications, entering into unit or development agreements with the Secretary of the Interior, and actually drilling in the search for oil or gas. It is estimated that over $12 million have been expended by these various companies since the renewed activity in the search for oil and gas commenced four years ago.

The ten major companies active in Alaska in 1955 and 1956 were as follows: General Petroleum, Humble Oil, Ohio Oil, Phillips Petroleum, Richfield Oil, Shell Oil, Standard of California, The Texas Company, Union Oil, and Sunray Mid-Continent. A complete tabulated list of oil activities is given at the end of the report. Geologists have designated the various areas or regional structures considered favorable to oil as "oil provinces."

Phillips Petroleum Company completed their second test in the Icy Bay area to a depth of 10,000 feet. No oil or gas discovery was reported. They are now drilling a third test only 1,200 feet from the No. 2 with both of their drill rigs remaining in this area. An extension of time has been granted this company on the commencement of drilling operations in the Katalla section, which was to have started in 1956. Phillips has also acquired 50,000 acres on the Kenai Peninsula.

Standard Oil Company of California continued their geologic reconnaissance in several sections of the Territory and have acquired leases in the Katalla area and on the Alaska and Kenai Peninsulas.

Shell Oil Company has also acquired leases on the Alaska and Kenai Peninsulas and continued their field reconnaissance activities.

Richfield, Union, and Ohio oil companies have entered into a unit agreement covering 70,000 acres on the Kenai Peninsula. This area lies almost wholly within the Kenai National Moose Range, and a twenty-mile road to the test site has been completed. Drilling is to commence early in 1957. Other acreage is held by these three companies in Alaska.

General Petroleum Company has acquired leases on the Kenai Peninsula as has Sunray Mid-Continent.

Humble Oil Company and The Texas Company have jointly conducted geologic reconnaissance in several parts of the Territory.

Colorado Oil and Gas Company has conducted extensive seismic and gravimetric surveys with full-time helicopter support on

1,200,000 acres near Yakutat held under special contract with the Secretary of the Interior. A tentative test site has been selected and drilling is to commence early in 1957.

The Iniskin Unit Operators, representing the Havenstrite Oil Company of Los Angeles, deepened their test at Iniskin Bay to 9,745 feet. Detailed logging of this hole was completed early in 1956 and operations were temporarily suspended.

Alaska Oil and Gas Company and Aledo Oil Company in a joint venture deepened their Nelchina test with a cable rig operating for a short period during the summers of 1955 and 1956. Aledo proposes to bring in a rotary rig for drilling to a greater depth.

Alaska Gulf Oil and Gas Company drilled a test near Goose Bay in 1955 to a depth of 3,900 feet. This test was plugged and abandoned as a dry hole.

Anchorage Gas and Oil Development Company drilled their second and third shallow stratigraphic test in the Houston area. One of these tests is to be deepened by a large rotary rig now at the site.

Texota Oil Company and Brooks-Scanlon Oil Company jointly conducted geologic reconnaissance in the Kateel River area of the Koyukuk Basin. Applications for leases covering over 1½ million acres have now been applied for in this area.

Far North Oil Company acquired acreage adjoining that of Alaska Oil and Gas in the Nelchina area.

The possible opening of Naval Petroleum Reserve No. 4 and the area withdrawn under Public Land Order No. 82 to private enterprise has been discussed throughout the biennium. As yet no official action has been taken to release any of these 48 million acres, and the Interior Department has expressed the intention of asking for Congressional action before any of this area is opened to public entry.

LAWS AND REGULATIONS PERTAINING TO LOCATING AND LEASING MINERAL GROUND

Under the present mining laws, all mineral deposits except oil, gas, coal, and common varieties of sand, stone, gravel, pumice (except block pumice), pumicite, and cinders may be located and held by staking mineral claims on public domain. Gold-bearing gravel is not common gravel. Public domain includes all government-owned lands which have not been withdrawn or reserved for some purpose.

Mining claims are of two types: placer and lode. They are staked under slightly different regulations, but in either case a prospector must make a discovery of valuable mineral on or in the ground before he may stake it.

Placer claims are staked on ground where the mineral is not "in place"; that is, where it has been moved from its original position in bedrock by erosion and weathering agencies to another location in an unconsolidated deposit, usually in an ancient or present stream bed. In Alaska there is a limit on the staking of placer claims to two per month in any one recording precinct. Claims may be staked for others by power of attorney, but in the case of placer claims they cannot be staked in any manner so that any one person may accumulate more than the legal limit. The size of a placer claim can be no larger than 20 acres, and the dimensions are ordinarily 1,320 by 660 feet, but it cannot be longer than 1,320 feet. It must be marked by a post or monument at each corner and angle of the boundary lines and the boundary lines must be marked on the ground. A location notice must be posted on the claim giving the name of the claim, name of the locator, date of location, and description of claim. The location notice may be posted on one of the corner posts. A location certificate must be recorded with the recorder of the recording precinct in which the claim is located within 90 days of the location. The certificate contains the same information as the location notice with the addition of the description of the actual geographical situation of the claim sufficiently clear to enable another person to find the location. The University of Alaska is preparing a map for

public sale which will show the locations of recording precinct boundaries and offices.

Lode claims are staked where the valuable mineral is "in place," undisturbed in its original position in a vein or lode in bedrock. There is no restriction on the number of lode claims that may be staked, but the locator should remember that assessment work must be done for each of his claims if he is to hold them. The dimensions of lode claims cannot be longer than 1,500 feet along the vein nor extend more than 300 feet from the vein on either side. Thus, the correct size of the lode claim, when possible, is 1,500 by 600 feet with the vein outcrop (called the apex) running through the center of the claim. The end lines of the lode claim must be paralled if the miner is to have his extralateral rights which entitle him to follow the vein down after it passes out from under the side lines, but require him to remain between the downward vertical extensions of the end lines. Thus, if the claim is properly staked, he may follow the vein as deep as he wishes, regardless of which way it dips, but he cannot mine more than 1,500 feet, or his claim length, of the vein laterally.

A minimum of seven posts or monuments is required to follow legal requirements in locating a lode claim. One post must be on each corner, one in the center of each end line where the line crosses the apex of the vein, and one at the discovery point on which the location notice is posted. The discovery point must be within the claim, and not on one of the boundary lines. As with the placer claim, posts are also required at any angle of the boundary lines, and all boundary lines should be marked. Practically the same information is written on the lode location notice as the placer, and forms for each may be purchased from various printing concerns in the Territory. Claim location certificates must be recorded at the recorder's office within 90 days after the date of location. To legally hold claims after they are staked and recorded, $100 worth of assessment work must be done on each claim each year. This work must be done in such a way as to improve the claim or benefit it toward the eventual extraction of minerals. Work for a group of claims that are contiguous may all be done on one claim. Cost of tools purchased or transportation expense of tools or personnel to or from the claim is not chargeable to assessment work. The annual deadline for completion of assessment work is July 1st at noon, but work is not required for the assessment year during which the claim is staked. An affidavit stating that the assessment work has been done should be recorded each year as proof that the claim is being legally held.

After $500 worth of work has been done on a claim, the holder may apply for a patent. This gives him full title to the ground and relieves him of the necessity of doing the annual assessment work. The process of obtaining a patent is lengthy and rather expensive, the details of which may be obtained from the Bureau of Land Management.

A small book entitled **Alaska Mining Laws** by Henry Roden may be purchased from **Jessen's Weekly**, Box 970, Fairbanks, Alaska, or from various bookstores around Alaska, for $2.50. A brief information circular on claim staking procedures is available free from the TDM.

Oil and coal lands are not staked like other minerals, but are acquired by leases obtained from the Bureau of Land Management. In the case of oil and gas in Alaska, an individual may apply for a lease on one or more tracts of unproven land by paying the initial fees and rentals. Leases are for a five-year period, with a single five-year extension, or as long as production occurs. Rental is 25 cents per acre for the first year; second and third year rental waived; 25 cents per acre for fourth and succeeding years. Upon discovery, rental is $1.00 per acre plus 12½% royalty (5% for the first ten years for the first producer in a new area). An individual or corporation may lease up to 100,000 acres on this basis, the maximum acreage per tract being 2,560 and the minimum 640.

A development company may be formed which may obtain options from lessees up to as much as 200,000 acres for a two-year period.

On known or producing geologic structures, lands are leased only after competitive bidding on leases with a maximum size of 640 acres to a total of 15,360 acres for a person or corporation. The term of the lease is five years and as long thereafter as production continues in paying quantities. Rental is $1.00 per acre per year with royalty rate of 12½% to 25%.

There are no designated producing structures in Alaska at the present time.

The Secretary of the Interior is authorized to survey the public lands in Alaska known to be valuable for their deposits of coal and to divide the unreserved coal lands and coal deposits into leasing blocks or tracts of 40 acres each, or multiples thereof, in such form as will permit the most economical mining of the coal therein, not exceeding 2,560 acres in any block, and to offer such blocks for lease.

A lease may be issued for a period of not more than 50 years, subject to renewal on such terms and conditions as the law at the time of renewal may authorize, and it confers upon the lessee the exclusive right to mine and dispose of all the coal and associated minerals in the tract leased. He must covenant to invest in actual mining operations upon the land not less than $100 for each acre involved, of which amount not less than one-fifth must be expended during the first year of the lease and a like sum in each of the next succeeding four years.

The Secretary of the Interior is authorized to issue coal-prospecting permits to applicants qualified to hold coal leases where prospecting or exploratory work is necessary to determine the existence or workability of coal deposits in an unclaimed, undeveloped area in Alaska. Permits are issued for terms of not exceeding four years and may not include more than 2,560 acres. If within the life of the permit, the permittee shows that the land contains coal in commercial quantity, he is entitled to a lease of the land.

Limited licenses or permits are issued, granting the right to prospect for, mine, and dispose of coal belonging to the United States, on specified tracts not exceeding 10 acres, and for not more than an area reasonably sufficient to supply the quantity of coal needed, to any one person or association of persons in any one coal field for a period of two years without payment of royalty for the coal mined or for the land occupied.

EMPLOYMENT AND ACCIDENTS AT MINES

The following Table IV reveals the trend of employment in the mining industry from 1914, the first year for which records are available, through 1956. Accidents and employment at the various types of mines are shown for each year of the biennium in Table V. The number of man-shifts, number of accidents, and resulting time lost at mines of various types in Alaska, during each year for which records are available, are indicated in Table VI.

Fatalities

Two fatalities resulted from accidents in mines or on mining properties during the biennium, one in 1955 and one in 1956. Both were at the Red Devil mercury mine of the DeCoursey Mountain Mining Company on the Kuskokwim River near Sleetmute. Investigations revealed the following facts:

Roy Christenson, September 28, 1955. The accident occurred as a result of a trench cave-in on the surface. The deceased, a plumber, descended into the narrow eight-foot deep trench before it was properly cribbed and against the advice of other workmen. His purpose was to take some measurements for some material to be installed in the trench. The trench caved and pinned him between the bank and a sheet of plywood which he had placed in the ditch. It required about ten minutes to extricate him. Four hours of artificial respiration plus oxygen and an adrenalin injection failed to revive him. It is presumed he died from suffocation.

Emil Jutila, January 28, 1956. This accident occurred underground at the head of a chute beneath a raise which was being excavated. The deceased, an experienced miner, was working alone. His working partner was below on the next level drawing ore from the chute. The deceased was found partly buried in the chute, head down. Several pieces of evidence, including his broken hard hat found to one side of the head of the chute, indicate that he was struck a crushing blow on the head by a rock falling from the raise above, and was probably killed before he fell into the chute.

TABLE IV

Employment at Mines, 1914 to 1956, Inclusive

Number of Men Employed at:

Year	Placers	Lode Mines and Milling Plants	Coal and Other Mines	Totals
1914	4,400	3,500	140	8,040
1915	4,400	3,850	160	8,410
1916	4,050	4,200	340	8,590
1917	3,550	3,220	270	7,040
1918	3,000	1,897	400	5,297
1919	2,180	1,757	310	4,247
1920	1,990	1,880	360	4,230
1921	2,150	1,681	400	4,231
1922	2,198	1,623	280	4,101
1923	2,080	1,500	270	3,851
1924	2,500	1,978	175	4,653
1925	2,700	1,745	116	4,561
1926	2,332	1,663	108	4,103
1927	2,325	1,930	114	4,369
1928	2,234	1,668	109	4,011
1929	2,354	1,605	89	4,048
1930	2,220	1,502	98	3,820
1931	2,163	1,323	78	3,564
1932	2,180	1,496	78	3,754
1933	2,063	1,246	68	3,377
1934	2,195	1,451	79	3,725
1935	2,323	1,665	89	4,077
1936	2,605	1,867	105	4,577
1937	3,136	1,957	92	5,185
1938	3,470	2,071	218	5,759
1939	3,928	1,986	229	6,143
1940	4,240	1,974	149	6,363
1941	3,965	1,805	218	5,988
1942	2,175	1,065	249	3,489
1943	556	581	312	1,449
1944	658	489	393	1,540
1945	903	238	309	1,450
1946	1,694	446	334	2,474
1947	1,824	384	280	2,488
1948	1,938	309	267	2,514
1949	1,838	262	323	2,423
1950	1,722	243	297	2,262
1951	1,219	202	287	1,708
1952	1,286	222	404	1,912
1953	1,460	270	394	2,124
1954	1,356	299	345	2,000
1955	1,331	420	287	2,038
1956	1,323	386	282	1,991

TABLE V

Summary of Accidents and Employment at Mines in Alaska 1955-1956

Number of Mines	Group	Number of Men Employed	Number Shifts Worked	Results of Accidents: Fatal	Results of Accidents: Nonfatal	Total Time Lost Days
	(1955)					
	PLACER MINES:					
20	Dredges	845	192,300	0	154	944
101	Nonfloat	351	48,450	0	0	0
20	Hydraulic	31	2,580	0	0	0
20	Small scale hand	23	2,530	0	0	0
26	Others*	81	7,360	0	0	0
187		1,331	253,220	0	154	944
	COAL MINES:					
6	Underground	203	57,484	0	52	435
5	Strip	84	18,965	0	30	139
11		287	76,449	0	82	574
	LODE MINES:					
123	Metal**	401	48,000	1	5	136
2	Nonmetal	7	1,260	0	0	0
125		408	49,260	1	5	136
	MILLS:					
1	Metal	12	3,200	0	1	2
324	Totals	2,038	382,129	1	242	1,656
	(1956)					
	PLACER MINES:					
21	Dredges	852	194,000	0	124	918
93	Nonfloat	327	45,150	0	0	0
17	Hydraulic	30	2,500	0	0	0
14	Small scale hand	16	1,455	0	0	0
31	Others*	98	8,900	0	0	0
176		1,323	252,005	0	124	918
	COAL MINES:					
6	Underground	201	54,804	0	42	458
4	Strip	81	24,685	0	32	233
10		282	79,489	0	74	691
	LODE MINES:					
134	Metal**	371	44,500	1	20	169
2	Nonmetal	7	15,000	0	0	0
136		378	59,500	1	20	169
	MILLS:					
1	Metal	8	2,400	0	12	148
323	Totals	1,991	393,390	1	230	1,926

* Includes prospectors and placer drift operations.
** Includes prospectors and intermittent operations.
For explanation of placer mining classifications, see footnotes at end of List of Alaska Mining Operations.

TABLE VI

Summary of Man-Shifts Worked, Fatal and Nonfatal Accidents, and Time Lost in All Mines in Alaska

Year	Man-Shifts Worked at			Fatalities			Nonfatal Accidents			Time Lost (Days)		
	Placer Mines	Lode Mines and Mills	Coal Mines	Placer Mines	Lode Mines and Mills	Coal Mines	Placer Mines	Lode Mines and Mills	Coal Mines	Placer Mines	Lode Mines and Mills	Coal Mines
1912				6	6							
1913				10	15							
1914				5	14							
1915				4	19							
1916				7	22		27	736				
1917				9	24		11	705				
1918				1	12		0	199				
1919				0	13		5	350	5			
1920				0	9		0	302			2,831	
1921		568,615	103,389	0	12		0	249			3,519	471
1922		537,180	55,309	0	5	0	0	252			4,344	250
1923	84,948	618,359	66,927	2	9	0	7	230	42	394	3,991	673
1924	117,545	468,890	51,398	0	16	0	30	327	6	560	4,882	75
1925	405,000	592,326	34,353	0	6	0	0	303	5	No report	5,639	109
1926	418,744	563,992	51,398	1	6	1	90	365	10	1,042	5,308	75
1927	418,235	555,155	34,915	2	7	1	178	259	13	3,267	4,819	445
1928	445,707	559,081	32,766	3	6	0	152	302	2	2,048	5,981	19
1929	420,249	524,836	25,525	5	9	0	142	255	6	1,657	4,301	197
1930	484,301	486,515	30,101	0	7	0	123	271	7	1,096	3,979	221
1931	437,573	425,201	22,129	0	6	0	92	167	5	1,251	2,668	101
1932	441,335	445,876	22,267	0	5	0	67	163	14	765	2,630	250
1933	437,267	403,021	19,805	1	7	0	90	177	2	1,077	2,381	9
1934	478,908	443,265	20,514	0	6	0	95	220	7	1,313	3,784	201
1935	499,765	458,440	23,571	2	6	0	116	266	12	1,250	4,372	291
1936	496,370	515,105	27,285	2	8	0	89	284	8	1,014	3,780	149
1937	547,748	548,929	25,267	2	2	16	129	298	14	1,733	5,007	407
1938	607,624	595,520	27,744	2	5	0	112	351	20	1,365	5,091	423
1939	683,624	548,121	26,643	1	3	0	158	302	15	2,263	4,247	488
1940	718,153	552,579	34,450	4	4	0	162	313	29	1,999	4,260	721
1941	657,142	517,347	54,779	1	1	0	151	325	38	1,978	5,069	630
1942	358,185	300,785	68,593	2	2	2	72	149	41	1,129	3,002	746
1943	82,780	155,370	84,694	0	3	1	1	82	37	54	1,338	635
1944	98,117	81,246	101,609	0	1	0	0	18	89	0	386	2,057
1945	145,260	52,224	84,523	0	0	3	5	2	64	22	10	1,417
1946	297,529	116,670	82,303	0	1	1	44	12	75	521	131	952
1947	351,916	85,361	80,691	1	1	1	65	8	47	869	110	646
1948	390,566	66,602	74,273	0	0	1	55	7	48	1,003	322	613
1949	361,494	54,796	86,602	0	0	0	59	12	66	538	427	1,292
1950	343,974	52,850	70,364	0	0	1	38	14	63	656	596	941
1951	222,577	33,035	66,985	1	0	0	45	1	66	402	10	834
1952	246,065	40,060	85,438	1	0	0	27	0	88	200	0	904
1953	284,390	34,490	112,636	1	1	2	53	12	160	616	98	2,049
1954	265,820	43,410	81,049	1	3	1	46	20	71	374	190	1,048
1955	253,220	62,460	76,449	0	1	0	154	6	82	944	138	574
1956	252,005	61,900	79,489	0	1	0	124	32	74	918	317	691

LIST OF ALASKA MINING OPERATIONS ACTIVE DURING THE BIENNIUM, 1955-1956

Name and Address of Operator	Location of Mine	Recording Precinct and (USGS Quadrangle)	Type of Operation	Approx. Crew
*A and S Mining Co., Wiseman	Mascot Cr. Koyukuk Dist.	Fairbanks (Wiseman)	Nonfloat	3
Admiralty Alaska Gold Mining Co., Box 2642, Juneau	Funter Bay Admiralty Dist.	Juneau (Juneau)	Nickel-Copper lode development	4
*Alaska Copper Mines, Inc., Box 3365, Seattle 14, Wash.	Valdez Cr. Dist. Maclaren River	Talkeetna (Mt. Hayes)	Copper lode development	8
Alaska Exploration and Mining Co., Mrs. Mike Trepte, Talkeetna	Bird Cr. Yentna Dist.	Talkeetna (Talkeetna)	Hydraulic	3
Alaska Juneau Gold Mining Co., Box 2419, Juneau	A. J. Mine, Juneau Juneau Dist.	Juneau (Juneau)	Gold lode and mill (Maintenance only)	30
Alaska Metals Mining Co., Box 965, Fairbanks	Gilmore Dome Fairbanks Dist.	Fairbanks (Fairbanks)	Tungsten exploration	2
Alaska Minerals Development Corp., A. S. Glover, Juneau	Juneau Dist.	Several	Uranium prospecting	2
Alaska Nickel Co., Fred Jenkins, Eagle	Flume Cr. Eagle Dist.	Fairbanks (Eagle)	Gold lode development	2
Albertson, E. O., 725 2nd Ave., Fairbanks	Maclaren River Valdez Cr. Dist.	Talkeetna (Mt. Hayes)	Copper lode prospecting	1

Albe Ventures, Box 1108, Ketchikan	Southeast Alaska	Several	Air and ground prospecting for uranium	2
Alder Creek Mining Co., Box 1999, Fairbanks	Fairbanks Cr. Fairbanks	Fairbanks (Livengood)	Nonfloat	10
Alluvial Golds, Inc., Coal Creek	Woodchopper Cr. Circle Dist.	Fairbanks (Charley River)	Stripping only in 1955	4
*American Creek Exploration Co., Wm. Hammersly and Associates, Anchorage	Bristol Bay and Redoubt Dists.	Iliamna (Iliamna)	Prospecting	1
*American Metal Co., 61 Broadway, New York 6, N. Y.	Alaska general	Several	Mineral investigations	2
*American Smelting and Refining Co., 718 Granville St. Vancouver, B. C.	Alaska general	Several	Mineral investigations	2
Amero, A. W., Chandalar	Big Cr. Chandalar Dist.	Fairbanks (Chandalar)	Small scale hand	1
**Anaconda Company, The, Box 1764, Spokane 10, Wash.	Alaska general	Several	Mineral investigations	2
**Anchorage Mineral Development and Exploration Co., Anchorage	Grubstake Cr. Chistochina Dist.	Chitina (Gulkana)	Placer prospecting	2
Anderson, Ellis Chandalar	Tobin Cr. Chandalar Dist.	Fairbanks (Chandalar)	Small scale hand	1
**Anderson, Tury and Associates Fairbanks	Fairbanks Dist.	Fairbanks (Fairbanks)	Lode prospecting	3

*Anderson, Tury and Rassmussen, Walter, Fairbanks	Miller Cr. Circle Dist.	Fairbanks (Circle)	Nonfloat	2
**Antonsen, Hans 2719 Tongass, Ketchikan	Southeast Alaska	Several	Prospecting	1
**Associated Prospectors Box 2436, Ketchikan	Southeast Alaska	Several	Air and ground prospecting for uranium	1
Atlas Mines George J. Waldhelm Box 105, Nome	Dahl Cr. Kougarok Dist.	Cape Nome (Bendeleben)	Nonfloat	3
Austin, Robert E. 826 8th Ave, Anchorage	Grubstake Cr. Chistochina Dist.	Chitina (Gulkana)	Nonfloat	2
Babel, McGahan, and Thorgaard Fairbanks	Valdez Cr. Valdez Creek Dist.	Talkeetna (Healy)	Lode prospecting	3
*Backstrom, Gust Flat	Idaho Cr. Iditarod Dist.	Mt. McKinley (Iditarod)	Hydraulic	1
**Banner Mining Co., 2712 4th Ave., Ketchikan	Moira Sound Ketchikan Dist.	Ketchikan (Dixon Entrance)	Uranium-thorium prospects	2
Barrett, Frank Chicken	Mosquito Fork Fortymile Dist.	Fairbanks (Eagle)	Prospecting	1
Basin Creek Mining Co., Herbert Engstrom Box 554, Nome	Basin Cr. Nome Dist.	Cape Nome (Nome)	Nonfloat	3
Bear Creek Mining Co., W. 1017 Riverside Ave., Spokane, Wash.	Alaska general	Several	Mineral investigations	4

*Beaver, Mary and Stephens, V. Box 774, Talkeetna	Nugget Cr. Yentna Dist.	Talkeetna (Talkeetna)	Small scale hand	2
**Beaver, M., Stephens, V., and Brandl, P. and R. Box 744, Talkeetna	Nugget Cr. Yentna Dist.	Talkeetna (Talkeetna)	Nonfloat	4
**Beckwith, Rea Box 119, Anchorage	Alaska general	Several	Mineral explorations and prospecting	5
Belanger, George and Cameron, J. Box 1771, Palmer	Albert Cr. Nelchina Dist.	Chitina (Talkeetna Mts.)	Hydraulic	2
Benick, Ed Box 251, Nome	Ophir Cr. Council Dist.	Cape Nome (Solomon)	Small scale hand	1
Berg, L. C. Box 58, Sitka	Southeast Alaska	Several	Prospecting	1
Berg, Rhinehart Chitina	Ruby Cr. Shungnak Dist.	Noatak-Kobuk (Ambler River)	Copper lode development	3
Birklid, William 645 10th St., Fairbanks	Jackson Cr. Bonnifield Dist.	Nenana (Fairbanks)	Nonfloat	1
Bittner, Paul Central	Deadwood Cr. Circle Dist.	Fairbanks (Circle)	Hydraulic	1
Blackjack Mining Association Mile 1½, S. Tongass Ketchikan	Southeast Alaska	Several	Prospecting	1
Blazek and Cessnun Box 1109, Ketchikan	Southeast Alaska	Several	Air and ground prospecting for uranium	1

Bliss, Patrick Nome or Box 2225, Anchorage	Sweepstakes Cr. Koyuk Dist.	Cape Nome (Candle)	Nonfloat	3
Bodis, George Box 64, Nome	Coarse Gold Cr. Kougarok Dist.	Cape Nome (Bendeleben)	Nonfloat	2
Bogan, P., G. Massoz, G. Hanson, R. Bogard, and A. Toffelmire Box 354, Seward	John Dryer Mine Hope Dist.	Seward (Seward)	Gold lode	5
Bolyan, George and Helen Cobol	Chichagof Dist.	Sitka (Sitka)	Prospecting	1
**Bornite Copper Corp., Ltd. 34 Gamble St. E., Rouyn, Quebec	Gravina Island Ketchikan Dist.	Ketchikan (Ketchikan)	Copper lode exploration, drilling	8
Bott, Earl and Lyle, and L. H. Coffield Fairbanks	Black Cr. Valdez Cr. Dist.	Talkeetna (Healy)	Nonfloat, lode prospecting and gold lode operation	3
Bowman, Fred E. Port Alsworth	Bristol Bay Dist.	Iliamna (Lake Clark)	Prospecting	1
*Brandl, Phillip and Rebecca Star Route, Spenard	Nugget Cr. Yentna Dist.	Talkeetna (Talkeetna)	Nonfloat	2
**Brattain, Ed Bethel	Aniak Dist.	Bethel (Bethel)	Mercury prospecting	2
**Breen, Amos 643 3rd Ave., Fairbanks	Circle Dist.	Fairbanks (Circle)	Lode prospecting	1
Breseman, John W. Box 796, Pelican	Chichagof Dist.	Sitka	Prospecting	1

Bronnicke, Fred Chistochina	Ahtell Cr. Chistochina Dist.	Chitina (Gulkana)	Lode gold prospecting	1
Brown, Erwin General Delivery, Petersburg	Southeast Alaska	Several	Prospecting	1
Burnette, Dewey and Hunter, M. Box 1995, Fairbanks	Crooked Cr. Kantishna Dist.	Fairbanks (Mt. McKinley)	Nonfloat	3
Canyon Creek Mining Co., Jens Kvamme and Sons Akiak	Marvel Cr. Aniak Dist.	Kuskokwim (Bethel)	Nonfloat	4
**Carbon Uranium Co., 230 West 7th St. Salt Lake City	Alaska general	Several	Mineral investigations	2
**Caribou Creek Dredge	Caribou Cr. Salcha Dist.	Fairbanks (Big Delta)	Gold dredge	3
Carlson, Ivor C. Ophir	Little Cr. Innoko Dist.	Innoko (Ophir)	Nonfloat	1
Carstens, Heine C. Central	Portage Cr. Circle Dist.	Fairbanks (Circle)	Nonfloat	2
**Carter and Love Box 945, Ketchikan	Ketchikan Dist.	Several	Prospecting	2
Casanoff, Jack Kiana	Klery Cr. Kiana Dist.	Noatak-Kobuk (Baird Mts.)	Small scale hand	1
**Cawthon, J. B. 2712 4th Ave., Ketchikan	Wrangell Dist.	Several	Prospecting	1

Chandalar Mining Co. Hugh Matheson, Jr. 613 3rd Ave., Anchorage	Big Cr. Chandalar Dist.	Fairbanks (Chandalar)	Nonfloat	2
Chappell, Oliver L. Wiseman	Thompson Gulch and Nolan Cr. Koyukuk Dist.	Fairbanks (Wiseman)	Hydraulic	1
**Charles, H. M. and G. Q. Box 118, Klawock	Ketchikan Dist.	Several	Prospecting	2
Chatham Creek Mining Co. Berg, Tweiten, and Wickstrom Box 64, Fairbanks	Chatham Cr. Fairbanks Dist.	Fairbanks (Livengood)	Nonfloat	3
Chicken Hill Mines, Inc. George Turner, 2438 N. Shore St. Chicago 45, Ill.	Lost Chicken Hill Fortymile Dist.	Fairbanks (Eagle)	Nonfloat	1
*Circle Dredging Co. Box 1498, Fairbanks	Crooked Cr. Circle Dist.	Fairbanks (Circle)	Gold dredge	6
Cline, Harvey Cordova	Yakataga Beach Yakataga Dist.	Cordova (Bering Glacier)	Small scale hand	1
Coast Range Exploration Co. Box 1753, Anchorage	Southeast Alaska	Several	Lode prospecting	2
Collinsville Mines, W. W. Renfro 1557 H St., Anchorage	Mills and Twin Crs. Yentna Dist.	Talkeetna (Talkeetna)	Nonfloat	10
Colorado Creek Mining Co. Fullerton Brothers McGrath	Colorado Cr. Innoko Dist.	Innoko (Ophir)	Nonfloat	5

Conkle, Earl J., and Associates Box 423, Ketchikan	Clover Pass Ketchikan Dist.	Ketchikan (Ketchikan)	Prospecting and lode exploration	3
Connell, Paul A. Central	Circle and Black Dists.	Fairbanks (Circle and (Charley River)	Prospecting	1
Coronado Copper and Zinc Co. Room 1206, Pacific Mutual Bldg. Los Angeles 14, Calif.	Alaska general	Several	Mineral investigations and exploration	5
**Cousins, Jack and Nordby, Jim Fairbanks	Mohawk Mine Fairbanks Dist.	Fairbanks (Fairbanks)	Reworking tailings	2
Crane, Fred and Associates Kotzebue	Northwestern and Northern Alaska Regions	Noatak-Kobuk (Several)	Prospecting	2
**Crook and Dodson Fairbanks	Tungsten Hill Fairbanks Dist.	Fairbanks (Fairbanks)	Tungsten lode development	2
Crozier, Myron Eagle	O'Brien Cr. Fortymile Dist.	Fairbanks (Eagle)	Nonfloat	1
Culver, Richard H. Talkeetna	Ruby Gulch Yentna Dist.	Talkeetna (Talkeetna)	Hydraulic	1
Dahl Creek Mine C. E. Stout Box 1464, Fairbanks	Dahl Cr. Shungnak Dist.	Noatak-Kobuk (Shungnak)	Nonfloat	3
Dahl, Robert Talkeetna	Nugget Cr. Yentna Dist.	Talkeetna (Talkeetna)	Small scale hand	2
*Davis, Walter 236 Fourth Ave., Anchorage	Camp Cr. Yentna Dist.	Talkeetna (Talkeetna)	Placer prospecting	2

DeCoursey Mountain Mining Co. Red Devil via McGrath	Red Devil Mine Aniak Dist.	Kuskokwim (Sleetmute)	Mercury lode	60
Degnan, Joseph A. Ophir	Esperanto Cr. Innoko Dist.	Innoko (Ophir)	Nonfloat	2
**Dickman, O. J. Teller	Kigluaik Mountains Nome Dist.	Cape Nome (Teller and Nome)	Prospecting	1
Donlin Placers Robert Lyman and Dick Acheson Crooked Creek	Snow Gulch Aniak Dist.	Kuskokwim (Iditarod)	Nonfloat	1
Eisenmenger, William 410 11th St., Fairbanks	Tibbs Cr. Goodpaster Dist.	Fairbanks (Big Delta)	Lode prospect	1
Elmer, Lewis Box 7, Quartzsite, Arizona	Slate Cr. Chistochina Dist.	Chitina (Mt. Hayes)	Nonfloat	2
Empire Jade Co., Gene Joiner Kotzebue	Jade Cr. Kiana Dist.	Noatak-Kobuk (Ambler River)	Jade recovery and cutting	1
**Enstrom, Oscar Fairbanks	American Cr. Hot Springs Dist.	Hot Springs (Tanana)	Nonfloat	1
Falls, Bentley Box 33, Livengood	Wilbur Cr. Tolovana Dist.	(Fairbanks) (Livengood)	Nonfloat	1
*Falls Creek Mining Co., Dan Ross Seward	Falls Cr. Hope Dist.	Seward (Seward)	Gold lode development	2
Ferguson, Archie Kotzebue	Chicago Cr. Fairhaven Dist.	Fairhaven (Bendeleben)	Placer preparations	2

Folwarzney, John Box 902, Ketchikan	Helm Bay and McLean Arm Ketchikan Dist.	Ketchikan (Craig and Dixon Entrance)	Prospecting and lode exploration	1
Foster, Neal W. Box 279, Nome	Seward Peninsula Several	Fairhaven and Cape Nome (Several)	Lode prospecting	1
Fowler, Howard and Associates 408 Rogers Bldg. Vancouver, B. C.	Southeast Alaska	Several	Mineral investigations	1
Franklin Mining Co., Roberts Brothers Box 1993, Fairbanks	Chicken Cr. Fortymile Dist.	Fairbanks (Eagle)	Nonfloat	5
Frasca, John and Hering, William Box 1182, Fairbanks	Eagle Cr. Circle Dist.	Fairbanks (Circle)	Nonfloat	2
**Gangola, Joe Route 1, N. Tongass Ketchikan	Ketchikan Dist.	Several	Prospecting	2
*Gardner Bay Mining Association 312 Commercial Bldg., Ketchikan	Gardner Bay Ketchikan Dist.	Ketchikan (Prince Rupert)	Uranium prospect	2
*Geolex Exploration and Development Co., 705-80 Richmond St., W. Toronto, Ontario	Hetta Inlet Ketchikan Dist.	Ketchikan (Craig)	Copper-iron lode investigation	2
Gillette, B. F. Box 285, Nome	Anvil Bench Nome Dist.	Cape Nome (Nome)	Small scale hand	1
*Gilmer Lode Mining Co., Fairbanks	Smallwood Cr. Fairbanks Dist.	Fairbanks (Fairbanks)	Gold lode	2

Gold Cord Mine Brown and Renshaw 705 13th Ave., Anchorage	Head of Fishhook Cr. Willow Cr. Dist.	Wasilla (Anchorage)	Gold lode	2
Gold Placers, Inc., Coal Creek	Coal Cr. Circle Dist.	Fairbanks (Charley River)	Gold dredge	5
*Gold Stream Mining Co., Denny G. Breaid Box 2116, Fairbanks	Goldstream Cr. Fairbanks Dist.	Fairbanks (Fairbanks)	Nonfloat	4
Goodnews Bay Mining Co., Platinum	Salmon River and tribs. Goodnews Bay Dist.	Bethel (Hagemeister Island)	Platinum dredge and Nonfloat	70
*Gore and Thatcher Box 893, Ketchikan	Southeast and Interior Alaska	Several	Air prospecting for uranium	2
Gouldsberry, Anson Seward	Crown Point Mine Hope Dist.	Seward (Seward)	Gold lode development	2
Granite Creek Mining Co., William Carlo Box 850, Fairbanks	Ophir Cr. Ruby Dist.	Nulato (Ruby)	Nonfloat	2
Grubstakers, Inc., 1032 H. St., Anchorage	Alaska General	Several	Mineral investigations	3
Guck, Robert Whittier	Kisaralik River Aniak Dist.	Bethel (Bethel)	Mercury and gold lode prospect	1
Hamburg and Rafchiek Talkeetna	Pass Cr. Yentna Dist.	Talkeetna (Talkeetna)	Placer prospecting	4

**Hammersly, William Anchorage	Nonvianuk Lake area Bristol Bay Dist.	Kvichak (Mt. Katmai)	Prospecting	1
Hanson, Burnette Eagle	Crooked Cr. Eagle Dist.	Fairbanks (Eagle)	Nonfloat	2
Hard, Eric Ophir	Bear Cr. Innoko Dist.	Innoko (Ophir)	Nonfloat	4
Hassel Mining Co., Harold Hassel Box 1071, Fairbanks	Ready Bullion Cr. Fairbanks Dist .	Fairbanks (Fairbanks)	Nonfloat	3
Havenstrite Oil Co., Mining Division Candle	Candle Cr. Fairhaven Dist.	Fairhaven (Candle)	Nonfloat	20
Hayes, Howard Box 1136, Douglas	Beach Yakutat	Juneau (Mt. Fairweather)	Prospecting	2
*Hayes, Howard Box 1136, Douglas	A. J. Mine tailings Juneau Dist.	Juneau (Juneau)	Nonfloat	2
Heiner, Larry Box 182, Petersburg	Petersburg and Kupreanof Dists.	Several	Lode prospecting	2
Henton, Fred	Slate Cr. Hope Dist.	Seward (Seward)	Gold lode prospecting	1
**Hibbard, Bill Box 525, Craig	Ketchikan Dist.	Several	Prospecting	1
**Hicock, Clara and Forest Inglehorn Talkeetna	Thunder Cr. Yentna Dist.	Talkeetna (Talkeetna)	Hydraulic	3

**Hobb Enterprises, Inc., Helen Butcher 1709 Aleutian St., Anchorage	Slate Cr. Chistochina Dist.	Chitina (Mt. Hayes)	Nonfloat	7
Hodson, Clell A. Pelican	Juneau and Chichagof Dists.	Juneau and Sitka (Juneau and Sikta)	Prospecting	1
Hogendorn, Jack Deering	Inmachuck River Fairhaven Dist.	Fairhaven (Bendeleben)	Hydraulic	1
Holmes, Walter May Creek via Cordova	Dan, May, and Rex Cr's. Nizina Dist.	McCarthy (McCarthy)	Prospecting and Hydraulic placer Maintenance	1
Hope Mine R. V. Watkins Box 521, Fairbanks	Faith Cr. Fairbanks Dist.	Fairbanks (Circle)	Nonfloat	3
**Huff, Kelly, and Caldwell 309 Buren, Ketchikan	Gravina Island Ketchikan Dist.	Ketchikan (Ketchikan)	Copper prospect	3
Huffman, Hall, March and Nickelson Bethel	Little Kasigluk Cr. Aniak Dist.	Bethel (Bethel)	Placer prospecting	1
*Hulbert, James Box 863, Palmer	Lost Chicken Hill Fortymile Dist.	Fairbanks (Eagle)	Nonfloat	1
Hunter Creek Mining Co., Melo Jackovich Rampart	Hunter Cr. Rampart Dist.	Rampart (Tanana)	Nonfloat	1
Hyder Mines, Inc., Hyder	Riverside Mine Hyder Dist.	Hyder (Bradfield Canal)	Silver-lead-tungsten lode preparation	4

*I. and L Company Box 2015, Ketchikan	Kendrick Bay Ketchikan Dist.	Ketchikan (Dixon Entrance)	Uranium lode development	1
I-L-Mining Co., Box 2015, Ketchikan	Kendrick Bay & others Ketchikan Dist.	Ketchikan Several	Air and ground prospecting for uranium	2
Iditarod Operating Co., Frank C. "Tuffy" Edgington Box 607, Fairbanks	Grant Cr. Melozitna Dist.	Ft. Gibbon (Melozitna)	Nonfloat	3
Ihly, Nick and Associates 918 Fourth Ave., Anchorage	Gold Cr. Yentna Dist.	Talkeetna (Talkeetna Mtns.)	Placer preparations	2
Island Cove Mining Co., John Ballard Box 102, Sitka	Vicinity of Cobol Chichagof Dist.	Sitka (Sitka)	Development of various lodes	2
*J-B Mining Co., 413 Mission St., Ketchikan	Bradfield Canal and Kendrick Bay Ketchikan Dist.	Several	Prospecting	2
James, L. F. Hughes	Felix Fork Hughes Dist.	Ft. Gibbon (Hughes)	Nonfloat	1
Johansen, Engbret Chicken	Ingle Cr. Forytmile Dist.	Fairbanks (Eagle)	Small scale hand	1
*Johnson, Eric and McDermott, Paddy	Edgar Cr. Marshall Dist.	Wade Hampton (Russian Mission)	Prospecting	3
*Johnson, Fred Kobuk	Dahl Cr. Shungnak Dist.	Noatak-Kobuk (Shungnak)	Hydraulic	1
Johnson, Helmer Box 935, Fairbanks	Cleary Cr. Fairbanks Dist.	Fairbanks (Livengood)	Nonfloat	2

*Johnson, Henning Teller	Gold Run Cr. Port Clarence Dist.	Cape Nome (Teller)	Small scale hand and placer drift	1
**Johnson, Iver M. Fairbanks	Chisana Dist.	Fairbanks (Nabesna)	Prospecting	2
Johnson, Pete and Isaacson, Robert Hot Springs	Eureka Cr. Hot Springs Dist.	Hot Springs (Tanana)	Nonfloat	2
Johnson, William Mile 54, Seward Highway	Hope Dist.	Seward (Seward)	Gold lode development	1
Jones, R. H., Harvey, C. K. Doherty, Pete Wiseman	Smith Cr. Koyukuk Dist.	Fairbanks (Wiseman)	Hydraulic	3
Jurich, John and Carr, Tom Livengood	Lillian Cr. Tolovana Dist.	Fairbanks (Livengood)	Nonfloat	2
**Kalvick, Alf Skagway	Juneau Dist.	Skagway (Skagway)	Prospecting	1
Kenai Chrome Co., 545 E. 4th, Anchorage	Red Mountain Homer Dist.	Seldovia (Seldovia)	Chromium lode	29
Kendrick Bay Mining Co., (Climax Molybdenum Co.) Mines Park, Golden, Colorado	Kendrick Bay Ketchikan Dist.	Ketchikan (Dixon Entrance)	Uranium lode development — Drilling	4
Ketchum Creek Mining Co., Al Swatch Fairbanks	Ketchum Cr. Circle Dist.	Fairbanks (Circle)	Nonfloat	1
*Klose and Johnson 142 Austin St., Ketchikan	Kendrick Bay Ketchikan Dist.	Ketchikan (Dixon Entrance)	Prospecting	2

Kloss, Herman and Davis, Jack Sunset Cove	Sunset Cove Petersburg Dist.	Juneau (Sumdum)	Gold-antimony lode development and prospecting	2
Klukwan Iron Ore Corp., Box 163, Haines	Klukwan iron property Juneau Dist.	Haines (Skagway)	Iron placer and lode development	15
Koby, Jack Box 952, Juneau	Juneau Dist.	Juneau (Juneau)	Prospecting	1
Kodiak Exploration Co., Box 448, Kodiak	Kodiak Island Kodiak Dist.	Kodiak (Kodiak)	Tungsten prospecting	3
Kodiak Exploration Co., Box 448, Kodiak	Sitkalidak Island Kodiak Dist.	Kodiak (Kodiak)	Copper lode development	2
**Kopanski, Max Skagway	Juneau Dist.	Skagway (Skagway)	Prospecting	1
Koski, Jack Ruby	Trail Cr. Ruby Dist.	Nulato (Ruby)	Stripping and ditch construction	1
Kougarok Freight & Mining Co., Straub and Towner Box 558, Nome	Buster Cr. Nome Dist.	Cape Nome (Nome)	Gold dredge	2
LaCross Mining Co., Boundary	Davis Cr. Fortymile Dist.	Fairbanks (Eagle)	Nonfloat	2
Lahmeyer, Davisum and Shrum 2509 Fourth, Ketchikan	Southeast Alaska	Several	Air and ground prospecting for uranium	2
Langlow, Jens Central	Switch Cr. Circle Dist.	Fairbanks (Circle)	Hydraulic	1

Lanning, Tony and Dayo, Stanley Hot Springs	Shirley Bar and Omega Cr. Hot Springs Dist.	Hot Springs (Tanana)	Nonfloat	2
Last Chance Mining Co., William Munz Box 639, Nome	Eldorado Cr. Council Dist.	Cape Nome (Solomon)	Gold dredge	10
Lawrence, Bill Fairbanks	Nugget Cr. Fairbanks Dist.	Fairbanks (Fairbanks)	Nonfloat	1
*Lazo Uranium Associaiton Box 893, Ketchikan	South Arm Moira Sound Ketchikan Dist.	Ketchikan (Dixon Entrance)	Uranium-thorium-rare earths prospecting	3
**Lee Brothers Dredging Co., Box 208, Nome	Solomon River Nome Dist.	Cape Nome (Solomon)	Gold dredge	12
Leonard, Harry Wiseman	Smith Cr. Koyukuk Dist.	Fairbanks (Wiseman)	Small scale hand	1
*Levesque, Richard 24 N. Central St. Peabody, Mass.	Ketchikan area Ketchikan Dist.	Ketchikan Several	Uranium prospecting	1
Liebrant, Ben and Boedecker Box 1543, Ketchikan	Hollis Ketchikan Dist.	Ketchikan (Craig)	Prospecting	1
Lillie, Angus and Associates Tokeen	Koskiusko Island Petersburg Dist.	Petersburg (Petersburg)	Prospecting	2
*Lilly, George and Associates Fairbanks	Kugruk River Fairhaven Dist.	Fairhaven (Bendeleben)	Uranium prospecting and drilling	4
Lindfors, Hugo Box 97, Nome	Kigluaik Mtns. Nome	Cape Nome (Teller and Nome)	Prospecting	1

Lindfors, Hugo and Bale, May Box 97, Nome	Christian and Rocky Mtn. Cr's. Nome Dist.	Cape Nome (Nome)	Nonfloat	1
Lindgren, M. and Associates Fairbanks	Coffee Dome and Bedrock Cr. Fairbanks Dist.	Fairbanks (Livengood)	Gold lode prospecting	2
Lindquist, Hjalmer Ophir	Bedrock and Ester Crs. Innoko Dist.	Innoko (Ophir)	Nonfloat	2
Lindsay, George Seward	Oracle property Hope Dist.	Seward (Seward)	Gold lode	2
Little Minook Mining Co., Box 1505, Fairbanks	Little Minook Cr. Rampart Dist.	Rampart (Tanana)	Nonfloat	7
**Locke, Barney Anchorage	Sheep Mountain Willow Cr. Dist.	Palmer (Anchorage)	Copper prospecting	1
Loken, K. H. and Bedlington, Dick 423 3rd St., Juneau	Southeast Alaska	Several	Air and ground prospecting	2
Long Creek Mining Co., Robert Deacon Ruby	Long Cr. Ruby Dist.	Nulato (Ruby)	Nonfloat	2
**Lora Kay Co., Box 2130, Ketchikan	Bokan Mountain Ketchikan Dist.	Ketchikan (Dixon Entrance)	Uranium-thorium prospects	1
Lowman, Ted Fairbanks	Fairbanks Dist.	Fairbanks	Prospecting	1
Lucky Seven Mining Co., Walter Roman Miller House	Mastodon Cr. Circle Dist.	Fairbanks (Circle)	Nonfloat	4

**Lucky Syndicate A. L. Schneider & S. L. Godfrey Box 615, Nome	Koukarok River Kougarok Dist.	Cape Nome (Bendeleben)	Dredging preparations	5
**Lucky Ten Associates 1112 Tongass, Ketchikan	Ketchikan Dist.	Several	Prospecting	2
Lyons, Bill Star Route, Anchorage	Red Mountain area Homer Dist.	Seldovia (Seldovia)	Chromium prospecting	2
McCombe, Robert Chicken	S. Fork Fortymile River Fortymile Dist.	Fairbanks (Eagle)	Nonfloat	2
**McGee, L. Anchorage	Canyon Cr. Hope Dist.	Seward (Seward)	Placer preparations	4
McMann Corp. Esch & Quisberg Box 399, Nome	Kougarok River Kougarok Dist.	Cape Nome (Bendeleben)	Nonfloat	3
Magill, Fred Box 444, Petersburg	Southeast Alaska	Several	Lode prospecting	1
**Maki, Emil Skagway	Juneau Dist.	Skagway (Skagway)	Prospecting	1
Manske, Dan Chicken	Ingle Cr. Fortymile Dist.	Fairbanks (Eagle)	Nonfloat	2
Martin, Henry Circle Hot Springs	Portage Cr. Circle Dist.	Fairbanks (Circle)	Small scale hand	1
*Martinson, Olaf Teller	Gold Run Cr. Port Clarence Dist.	Cape Nome (Teller)	Small scale hand	1

Marvel Creek Mining Co., Fritz Awe Turnagain Arms Apts., Anchorage	Marvel Cr. Aniak Dist.	Kuskokwim (Bethel)	Nonfloat	2
*Mascot Creek Mining Co., Fairbanks	Mascot Cr. Koyukuk Dist.	Fairbanks (Wiseman)	Nonfloat	2
Maurer, Ernest L. 511 Fourth Ave., Fairbanks	First Chance Cr. Fairbanks Dist.	Fairbanks (Fairbanks)	Nonfloat	1
Meldrum, William Chicken	Stonehouse Cr. Fortymile Dist.	Fairbanks (Eagle)	Nonfloat	1
**Metcalf, Crockett and Associates Anchorage	Valdez Cr. Valdez Cr. Dist.	Talkeetna (Healy)	Placer and lode prospecting	3
Midnight Sun Mines Kay Handeland and Erick Kveven Box 443, Nome	Miller Cr. Kougarok Dist.	Cape Nome (Bendeleben)	Nonfloat	2
*Mineral Development & Exploration Co., Inc., c/o Plummer & Biss 220 Central Bldg., Anchorage	Chrome Queen Mine Homer Dist.	Seldovia (Seldovia)	Chromium lode development	12
Mineral Research, Inc., 2 Marine Way, Juneau	Southeast Alaska	Several	Air and ground prospecting	3
Mines Ventures, Inc. Jack Moore Gakona	Middle Fork Chistochina Chistochina Dist.	Chitina (Mt. Hayes)	Placer preparations and road construction	2
Miscovich Brothers Flat	Otter Cr. Iditarod Dist.	Mt. McKinley (Iditarod)	Nonfloat	5

Miscovich Brothers Fairbanks	Poorman Cr. Ruby Dist.	Nulato (Ruby)	Placer preparations	3
Moa, Arthur Hyder	Mountain View Property Hyder Dist.	Hyder (Ketchikan)	Lode exploration and prospecting	1
**Moneta Porcupine Mines, Ltd., Room 1505, 320 Bay St., Toronto 1, Ontario	Red Top Mercury Mine Bristol Bay Dist.	Bristol Bay (Dillingham)	Mercury lode development	4
*Mumtrak Miners James Bystad & Associates 527 1st St., Anchorage	Wattamuse Cr. Goodnews Bay Dist.	Bethel (Goodnews)	Nonfloat	6
Munoz, Juan Box 1738, Juneau	Southeast Alaska	Several	Prospecting	1
**Murane, Ralph Nome	Daniels Cr. Council Dist.	Cape Nome (Solomon)	Nonfloat	4
**Nelson, Grant H. Box 272, Nome	Inmachuk River Fairhaven Dist.	Fairhaven (Bendeleben)	Gold dredge	7
Nesland, Erling Wiseman	Vermont Cr. Koyukuk Dist.	Fairbanks (Wiseman)	Nonfloat	2
**Newmont Mining Corp. of Canada, Ltd. Room 604, 749 W. Hastings Vancouver, B. C.	Alaska General	Several	Mineral investigations	2
New York-Alaska Gold Dredging Co., Nyac	Tuluksak River, California Cr., Rock Cr. Aniak Dist.	Bethel (Russian Mission)	3 Gold dredges and Nonfloat	80

No Grub Mining Co., Ed Brenner Box 3161, Eastchester Br. Anchorage	No Grub Cr. Fairbanks Dist.	Fairbanks (Big Delta)	Nonfloat	7
North American Gold Dredging Co., Flat	Flat Cr. Iditarod Dist.	Mt. McKinley (Iditarod)	Gold dredge	12
Northern Lights Mining Co., Patrick Savage Ruby	Long Cr. Ruby Dist.	Nulato (Ruby)	Nonfloat	5
Northern Mining Co., Council	Niukluk River Council Dist.	Cape Nome (Solomon)	Gold dredge	10
Northern Pyrites Corporation 75 E. 45th St. New York 17, New York	Latouche Island Prince William Sound Dist.	Valdez (Seward)	Sulfide exploration, Core drilling	6
Northwest Ventures, Ltd., 315-850 W. Hastings St. Vancouver, B.C.	Southeast Alaska	Several	Mineral explorations	4
Novatney, Robert 104 9th St. Juneau	Helm Bay Ketchikan Dist.	Ketchikan (Ketchikan)	Gold lode development	1
*Nugget Creek Mining Co., Talkeetna	Cache Cr. Yentna Dist.	Talkeetna (Talkeetna)	Nonfloat	4
O'Brien, Jim and Dunsmire, Jim Cooper Landing	Surprise Cr. Hope Dist.	Seward (Seward)	Placer drift	2
O'Keefe, Dennis Wiseman	Twin Lakes Vicinity Koyukuk Dist.	Koyukuk (Chandalar)	Prospecting	1

Olive Creek Mines Carl Parker Box 552, Fairbanks	Olive Cr. Tolovana Dist.	Fairbanks (Livengood)	Nonfloat	5
*Olson, C. V Nome	Daniels Cr. Council Dist.	Cape Nome (Solomon)	Small scale hand	1
Olson, Henry T. Taku Harbor	Juneau and Admiralty Dists.	Juneau (Sumdum)	Prospecting	1
**Omlin, Paul	Moose Cr. Kantishna Dist.	Fairbanks (Mt. McKinley)	Nonfloat	1
*O'Neil, J. F. Seattle	Spirit Mtn. [illegible] Nizina Dist.	Chitina (Valdez)	Nickel lode exploration	2
*Ophir Mining Co., Neal Beaton Ophir	Upper Ganes Cr. Innoko Dist.	Innoko (Iditarod)	Gold dredge	9
*Ostnes, Lars and Company Fortuna Ledge	Willow Cr. Marshall Dist.	Wade Hampton (Russian Mission)	Nonfloat	3
Ott, Joe Box 744, Pelican	El Nido Property Chichagof Dist.	Sitka (Sitka)	Gold and tungsten Prospecting	1
Otter Dredging Co., Ogriz and Kobler Flat	Otter Cr. Iditarod Dist.	Mt. McKinley (Iditarod)	Gold dredge	7
Owen Ore Co., W. S. Moore Torrey Bldg., Duluth 2, Minn.	First and Third Divisions	Several	Mineral explorations	5

P. R. and H. Mining Co., Box 462, Fairbanks	Mastodon Cr. Circle Dist.	Fairbanks (Circle)	Nonfloat	4
*Palmer & Piekars Box 2528, Ketchikan	Noatak River Noatak Dist.	Noatak-Kobuk Several	Prospecting	2
Pekovich, W. S. Box 529, Juneau	Port Snettisham Juneau Dist.	Juneau (Sumdum)	Iron lode development	2
Petersburg Explorations Dave Ohmer Petersburg	Southeast Alaska	Several	Air and ground Prospecting for Uranium	2
Peterson, Knute c/o Jack Moore, Gakona	Chisana Dist.	Fairbanks (Nabesna)	Prospecting	1
Pettyjohn, Fred S. Big Delta	S. Slope Alaska Range	Talkeetna (Several)	Lode prospecting	1
Pieper and Eichner 2312 Tongass, Ketchikan	Southeast Alaska	Several	Air and ground prospect- ing for uranium and copper	2
Pioneer Exploration Co., Carl Bradley Box 125, Wrangell	Southeast Alaska	Several	Air and ground prospect- ing for uranium	3
Pitts, Fred Big Lake	Lake Cr. Koyukuk Dist.	Koyukuk (Chandalar)	Hydraulic	1
**Polfus, Bernard & Associates 1121/2 8th Ave. Anchorage	Lewis River Redoubt Dist.	Anchorage (Tyonek)	Nonfloat	2

*Poorman's Dream 204 Main St., Ketchikan	Kasaan Peninsula Ketchikan Dist.	Ketchikan (Craig)	Prospecting	1
*Potash Company of America Carlsbad, New Mexico	Alaska General	Several	Mineral investigations	1
Pratt, Jack c/o First National Bank of Alaska Anchorage	No Grub Cr. Fairbanks Dist.	Fairbanks (Big Delta)	Small scale hand	1
Price, Stanton Windham	Spruce Cr. Petersburg Dist.	Juneau (Sumdum)	Nonfloat and prospecting	1
Prince Creek Mining Co., Harry Agoff Flat	Prince Cr. Iditarod Dist.	Mt. McKinley (Iditarod)	Nonfloat	2
*Prince Mining Co., 216 Front St., Ketchikan	Southeast Alaska	Several	Air and ground prospecting for uranium	3
Pringle, A. W. Hot Springs	Rhode Island Cr. Hot Springs Dist.	Hot Springs (Tanana)	Nonfloat	2
Pritchett, Heath & Tucker 2401 Third Ave., Ketchikan	Southeast Alaska	Several	Air and ground prospecting for uranium	3
Prospectors, Inc. 544 2nd Ave., Fairbanks	Myrtle and Emma Cr's. Koyukuk Dist.	Fairbanks (Chandalar)	Prospecting	3
Purdy Brothers Chicken	Myers Fork Fortymile Dist.	Fairbanks (Eagle)	Nonfloat	2
**Purkeypile, I. W. & Associates Fairbanks	Tonzona Dist.	Mt. McKinley (Talkeetna)	Lode prospecting	3

Quail Creek Mining Co., William Redig & M. C. Haugdahl General Delivery, Fairbanks	Quail Cr. Rampart Dist.	Rampart (Livengood)	Nonfloat	2
Quitsch, William Valdez	Mineral Cr. Valdez Dist.	Valdez (Valdez)	Gold lode	1
Radovan, Martin McCarthy	Glacier Cr. Nizina Dist.	McCarthy (McCarthy)	Copper lode prospecting	1
Ragner, Joe Fairbanks	Head of Wolf Cr. Fairbanks Dist.	Fairbanks (Livengood)	Gold lode prospecting	1
Rainbow Mining Co., Frank Whaley Box 266, Nome	Goose Cr. Kougarok Dist.	Cape Nome (Bendeleben)	Nonfloat	2
Rambaud, John Chicken	Napoleon Cr. Fortymile Dist.	Fairbanks (Eagle)	Hydraulic	5
*Red Mountain Mining Co., A. L. Howard, 16351 Ashworth Seattle, Wash.	McCann Cr. Goodnews Bay Dist.	Bethel (Hagemeister Island)	Placer drilling (Platinum)	2
*Red Top Mercury Mines, Inc. Box 81, Dillingham	Red Top Mine Bristol Bay Dist.	Bristol Bay (Dillingham)	Mercury lode development	4
Ricks, Dean Fairbanks	Fairbanks Dist.	Fairbanks (Big Delta)	Prospecting	1
Robinson, George F. Boundary	Wade Cr. Fortymile Dist.	Fairbanks (Eagle)	Nonfloat	1
**Roop, Minor and Company Anchorage	Valdez Cr. Valdez Cr. Dist.	Talkeetna (Healy)	Placer testing and preparations	3

*Rosander, Toivo Ophir	Yankee Cr. Innoko Dist.	Innoko (Iditarod)	Nonfloat	9
Sargent, Alsworth, Pfaff, and Gill Box 353, Spenard	McNeil Prospect Bristol Bay Dist.	Iliamna (Iliamna)	Copper lode exploration	4
*Schaeffer, Russel Crooked Creek	Mukshulik Cr. Aniak Dist.	Kuskokwim (Sleetmute)	Nonfloat-gold, tungsten, and mercury	1
Schaeffer, Russel Crooked Creek	Cinnabar Cr. Aniak Dist.	Kuskokwim (Taylor Mtns.)	Mercury lode	1
Schultz, Henry McCarthy	Vicinity of McCarthy Nizina Dist.	McCarthy (McCarthy)	Copper lode development	1
Seaman, Edward R. Anchorage	Fresno Cr. Hope Dist.	Seward (Seward)	Hydraulic	1
Seldovia Mining Co., Frank Raby, Seldovia	Red Mountain Area Homer Dist.	Seldovia (Seldovia)	Chromium prospecting	2
*Shapley, Fred Box 964, Craig	Southeast Alaska	Several	Prospecting	1
*Shapley, George & Moreland, H. Box 576, Craig	Southeast Alaska	Several	Prospecting	2
Shell, Louis Seward	Canyon Cr. Hope Dist.	Seward (Seward)	Hydraulic	3
**Shotter, Frank Hoonah	Juneau and Sitka Districts	Several	Prospecting	1

**Simplot, J. R. Co., Mining Division, Continental Bank Bldg., Boise, Idaho	Klukwan Iron Property Juneau Dist.	Haines (Skagway)	Iron lode exploration	4
Slate Creek Mining Co., Box 1564, Fairbanks	Slate Cr. Koyukuk Dist.	Fairbanks (Chandalar)	Nonfloat	3
**Sleeper and McCharles, J. A. Fairbanks	Buckeye Cr. Tolovana Dist.	Fairbanks (Livengood)	Nonfloat	2
Slocum Arm Mining Co., George and Helen Bolyan Cobol via Juneau	Cox-Bolyan Property Chichagof Dist.	Sitka (Sitka)	Gold lode development	2
*Smith, A. B. Denali	Valdez Cr. Valdez Creek Dist.	Talkeetna (Healy)	Hydraulic	1
*Smith, Bill Box 2105, Ketchikan	Ketchikan Dist.	Ketchikan (Dixon Entrance and Prince Rupert)	Prospecting	1
Smith, Loren Star Route, Palmer	Eagle Cr. Chistochina Dist.	Chitina (Mt. Hayes)	Placer prospecting	3
**Sona Mining Co., Talkeetna	Camp Cr. Yentna Dist.	Talkeetna (Talkeetna)	Placer drilling	4
Southeastern Mining & Exploration Co., Inc., Box 1121, Juneau	Juneau Dist.	Juneau (Several)	Prospecting	2
Squaw Creek Mining Co., Edwin C. Gelvin Circle	Squaw Cr. Circle Dist.	Fairbanks (Circle)	Nonfloat	2

Squaw Creek Mining Co., Jack Wilke Boundary	Squaw Cr. Fortymile Dist.	Fairbanks (Eagle)	Nonfloat	1
Stampede Mines, Earl R. Pilgrim & Co., Box 1896, Fairbanks	Stampede Cr. Kantishna Dist.	Fairbanks (Mt. McKinley)	Antimony lode and mill,	4
Stanich Brothers Fairbanks	Porcupine Cr. Koyukuk Dist.	Fairbanks (Wiseman)	Nonfloat and placer drift	2
*Stanton, Harold Talkeetna	Thunder Cr. Yentna Dist.	Talkeetna (Talkeetna)	Hydraulic	1
**Strandberg Mines, Inc. 926 4th Ave., or Box 2099 Anchorage	Alaska general	Several	Mineral investigations	3
Strandberg Mines, Inc:. 926 4th Ave., or Box 2099 Anchorage	Iron Cr. Yentna Dist.	Talkeetna (Talkeetna Mtns.)	Prospecting	2
Strandberg Mines, Inc., 926 4th Ave., or Box 2099 Anchorage	Colorado Cr. Innoko Dist.	Innoko (Ophir)	Nonfloat	7
Strandberg Mines, Inc., Box 2099, Anchorage	Eureka Cr. Hot Springs Dist.	Hot Springs (Tanana)	Nonfloat	13
Strandberg Mines, Inc., Box 2099, Anchorage	Indian River Hughes Dist.	Fort Gibbon (Hughes)	Nonfloat	16
Strandberg Mines, Inc., Box 2099, Anchorage	Nixon Fork Mine McGrath Dist.	Mt. McKinley (Medfra)	Gold lode development	2

Stuver, Jules Flat	Happy Cr. & Flat Cr. Iditarod Dist.	Mt. McKinley (Iditarod)	Hydraulic	1
*Swanson Brothers Rampart	Hunter Cr. Rampart Dist.	Rampart (Tanana)	Nonfloat	2
*Sweepstake Mine Baldwin and Moon Box 371, Nome	Sweepstake Cr. Koyuk Dist.	Cape Nome (Candle)	Nonfloat	2
*Tallman and Churchwell Ketchikan	Ketchikan Dist.	Ketchikan (Several)	Prospecting	1
Taraski, A. J. Talkeetna	Cache Cr. Yentna Dist.	Talkeetna (Talkeetna)	Placer prospecting	1
**Taylor, C. C. & Young, R. W. Box 568, Fairbanks	Montana Cr. Fairhaven Dist.	Fairhaven (Bendeleben)	Diamond drilling	4
**Tetinek, Eugene Fortuna Ledge	Willow Cr. Marshall Dist.	Wade Hampton (Russian Mission)	Nonfloat	2
**Theron, Eckers and Kennedy Kasaan	Kasaan Peninsula Ketchikan Dist.	Ketchikan (Craig)	Prospecting	2
**Thomas, William Fairbanks	Hunter Cr. Ramart Dist.	Rampart (Tanana)	Nonfloat	1
*Thornberg Brothers Grand Junction, Colorado	Ketchikan Dist.	Ketchikan (Dixon Entrance)	Prospect investigations	1
*Tiger Talisman Placers Houston Alexander Box 294, Nome	Dahl Cr. Kougarok Dist.	Cape Nome (Bendeleben)	Nonfloat	1

*Timberline Placers Spade & Stout Miller House	Porcupine Cr. Circle Dist.	Fairbanks (Circle)	Nonfloat	5
**Totem Exploration Co., Joe Blazek 317 Dock St., Ketchikan	Southeast Alaska	Several	Prospect exploration and diamond drilling	2
Toussaint, Ed Fort Yukon	Big Cr. Chandalar Dist.	Fairbanks (Chandalar)	Gold lode development	1
Tronstad, Ted Box 1015, Fairbanks	Dahl Cr. Shungnak Dist.	Noatak-Kobuk (Shungnak)	Hydraulic (also Jade recovery)	1
Tweet, N. B., and Sons Teller	Kougarok River Kougarok Dist.	Cape Nome (Bendeleben)	Nonfloat, hydraulic, and dredge	7
*Ulen, Joe and Pingalo, Sam Wiseman	Nolan Cr. Bench Koyukuk Dist.	Fairbanks (Wiseman)	Nonfloat	1
**Union Carbide Nuclear Co., Grand Junction, Colorado	Kendrick Bay Ketchikan Dist.	Ketchikan (Dixon Entrance)	Uranium lode development, drilling	4
Union Carbide Nuclear Co., Grand Junction, Colorado	Alaska General	Several	Prospect investigations	1
Uotila, Gus Ophir	Ophir Cr. Innoko Dist.	Innoko (Ophir)	Nonfloat	6
**Uotila, Gus, Guy Rivers and Weldon McIntosh	Emma Cr. Koyukuk Dist.	Fairbanks (Wiseman)	Nonfloat	3
*Uranium 55 Box 917, Ketchikan	Southeast Alaska	Several	Air and ground prospecting for uranium	2

Uranium 56 Box 917, Ketchikan	Southeast Alaska	Several	Air and ground prospecting for uranium and other minerals	2
U.S.S.R. & M. Co., Box 1170, Fairbanks	Fairbanks Dist.	Fairbanks (Fairbanks and Livengood)	6 gold dredges	475
U.S.S.R. & M. Co., Box 438, Nome	Nome Dist.	Cape Nome (Nome)	2 gold dredges	175
U.S.S.R. & M. Co., Box 1170, Fairbanks	Hogatza River Hughes Dist.	Ft. Gibbon (Hughes)	Dredge construction	20
U.S.S.R. & M. Co., Box 1170, Fairbanks	Mosquito Fork Fortymile Dist.	Fairbanks (Eagle)	Stripping	17
U. S. Steel Corp., Columbia-Geneva Steel Div. 120 Montgomery St., San Francisco, California	Southeast Alaska	Several	Mineral investigations, Aerial prospecting, Core drilling	12
*U. S. Tin Corp., Lost River via Nome	Cassiterite Cr. Port Clarence Dist.	Cape Nome (Teller))	Lode tin mine	10
Utah Company of the Americas Room 1502, 736 Granville St., Vancouver 2, B. C.	Alaska General	Several	Prospect investigations & mineral exploration	2
Vuicich, Billy Box 1491, Fairbanks	Ester Dome Fairbanks Dist.	Fairbanks (Fairbanks)	Gold lode prospect	1
Wackwitz, Charles and Fred Box 1595, Fairbanks	Bedrock Cr. Fairbanks Dist.	Fairbanks (Livengood)	Prospect development	2

**Wall, Melvin	Valdez Cr. Valdez Cr. Dist.	Talkeetna (Healy)	Placer & lode prospecting	1
Watson, Ben Cape Yakataga	Yakataga Beach Yakataga Dist.	Cordova (Bering Glacier)	Small scale hand	2
Weinard, Fred O. Candle	Mud Cr. Fairhaven Dist.	Fairhaven (Candle)	Nonfloat	4
**Weiser, Charles J. McGrath	McGrath Dist.	Mt. McKinley (McGrath)	Mercury prospecting	1
Weisner Trading Co., Rampart	Little Minook Cr. Rampart Dist.	Rampart (Tanana)	Placer development	1
*Western Alaska Mining Co., R. J. Anderson Box 121, Spenard	Russian Mtns. Aniak Dist.	Kuskokwim (Sleetmute)	Mercury prospect development	2
*Westlake, Theodore Kiana	Klery Cr. Kiana Dist.	Noatak-Kobuk (Baird Mtns.)	Small scale hand	1
**White Bear Lode Co., Archie Ferguson & J. S. Robbins Kotzebue	Independence Property Fairhaven Dist.	Fairhaven (Bendeleben)	Core drilling lead-silver lode	2
Wihl, Otto	Niagara Cr. & Fox Bar Kougarok Dist.	Cape Nome (Bendeleben)	Prospecting	1
Wilkinson, Robert W. Miller House	Miller Cr. Circle Dist.	Fairbanks (Circle)	Nonfloat	4
*Williams, W. A. Flat	Granite Cr. Iditarod Dist.	Mt. McKinley (Iditarod)	Nonfloat	1

Willis, George H. & Lyman, Robert Sleetmute	Parks Prospect Aniak Dist.	Kuskokwim (Sleetmute)	Mercury lode development	2
Withrow, A. W. Fairbanks	Bedrock Bar on Koyukuk River, Koyukuk Dist.	Fairbanks	Small scale hand	1
Wiurm, Andrew Box 491, Nome	Dome Cr. Kougarok Dist.	Cape Nome (Bendeleben)	Hydraulic	1
Wolf Creek Mining Co., Inc., Box 141, Fairbanks	Wolf Cr. Fairbanks Dist.	Fairbanks (Livengood)	Nonfloat	5
Wolk, A. C. Skagway	Juneau Dist.	Skagway (Skagway)	Prospecting	1
*Worthington, Jucies & McKern 5181 Franklin Ave. Hollywood 27, California	Kendrick Bay Ketchikan	Ketchikan (Dixon Entrance)	Uranium lode prospect	1
*Xavier, Henry A. Candle	Gold Run Cr. Fairhaven Dist.	Fairhaven (Candle)	Small scale hand	1
Young, Larry Denali	Dry Cr. Valdez Cr.	Talkeetna (Healy)	Placer preparations	3
Yukon Placer Mining Co., Inc., Box 1108, Fairbanks	Livengood Cr Tolovana Dist.	Fairbanks (Livengood)	Nonfloat	12
Zaiser, Clarence Ruby	Greenstone Cr. Ruby Dist.	Nulato (Ruby)	Nonfloat	2
Zaiser, Leonard Medfra	Birch Gulch McGrath Dist.	Mt. McKinley (Medfra)	Nonfloat	1

Zimin, Nick South Naknek	Alaska Peninsula and Bristol Bay Dists.	Several	Prospecting	1
Zimovia Mineral Co., Box 246, Wrangell	Southeast Alaska	Several	Air and ground prospecting for uranium	2
Zurek, W. J. Miller House	Mastodon Cr. Circle Dist.	Fairbanks (Circle)	Small scale hand	1

* 1955 only
** 1956 only

"Nonfloat" indicates mechanical placer operation using draglines and/or bulldozers to transport gravel to nonfloating washing plant, bedrock sluiceboxes, or elevated sluices.

"Hydraulic" indicates operation in which gravel is excavated and transported to sluiceboxes solely by water jets from hydraulic nozzles.

"Smale scale hand" indicates operation in which gravel excavation and transportation is accomplished by hand or ground sluicing.

ACTIVE COAL MINES, 1955-1956

Name and Address of Operator	Location of Mine	Mining District and (USGS Quadrangle)	Type of Operation	Approx. Crew
Alaska Native Service Juneau	Meade River Point Barrow Field	Barrow Dist. (Meade River)	Underground	3
Arctic Coal Co., Inc. 1000 Polaris Bldg., Fairbanks	Lignite Cr. Nenana Field	Bonnifield Dist. (Healy)	Strip	6
*Cripple Creek Coal Co. 556 Second Ave., or Box 529 Fairbanks	Cripple Cr. Nenana Field	Bonnifield Dist. (Healy)	Strip	14
Evan Jones Coal Co. Jonesville	Jonesville Mine Matanuska Field	Willow Cr. Dist. (Anchorage)	Underground and strip	144
Mrak Coal Co., Box 16, Sutton	Near Eska Matanuska Field	Willow Cr. Dist. (Anchorage)	Underground and strip	16
Pioneer Mining Co., Inc. Palmer	Premier Mine Matanuska Field	Willow Cr. Dist. (Anchorage)	Underground	10
Suntrana Mining Co., Inc. Suntrana via Healy Forks	Healy Cr. Nenana Field	Bonnifield Dist. (Healy)	Underground	40
Usibelli Coal Mine, Inc. Suntrana	Healy Cr. Nenana Field	Bonnifield Dist. (Healy)	Underground and strip	60

* 1955 only

OIL AND GAS EXPLORATION PROJECTS ACTIVE DURING THE BIENNIUM, 1955-1956

Name and Address of Company	Location of Exploration	Type of Exploration
Alaska Gulf Oil & Gas Co., 326 4th Ave., Anchorage	Vicinity of Goose Bay Cook Inlet province	Drilled in 1955
Alaska Oil and Mineral 80 Wall Street, New York 5, N. Y.	Alaska in general	Leasing
Alaska Oil & Gas Development Co., Box 2000, Anchorage and Aledo Oil Company Fort Worth, Texas	Nelchina Valley near Eureka	Drilling
Anchorage Gas & Oil Co., 505 Barrow Street, Anchorage	Houston area Upper Cook Inlet province	Drilling
Brooks-Scanlon Oil Co., Minneapolis, Minnesota	Kateel River area Interior Alaska province	Geologic reconnaissance, leasing Associated with Texota Oil
Colorado Oil and Gas Co., Denver, Colorado	Yakutat-Icy Bay to Cape Fairweather	Leasing, geologic reconnaissance, geophysical exploration
Far North Oil & Gas Co., Anchorage	Nelchina Valley	Leasing
Humble Oil Co.,	Alaska in general	Aerial reconnaissance
Iniskin Unit Operators 811 W. 7th Street Los Angeles 7, California	Chinitna Bay area Alaska Peninsula	Drilling

Ohio Oil Co., Finley, Ohio	Kenai and Alaska Peninsulas	Leasing—Unit agreement with Richfield and Union
Phillips Petroleum Co., Bartlesville, Oklahoma or Box 580, Anchorage	Katalla—Yakataga province	Drilling—Performance contract with Dept. of Interior on large acreage
Richfield Oil Co., Los Angeles, California	Kenai and Alaska Peninsulas	Leasing—Unit agreement with Ohio and Union
Shell Oil Co., Hoge Building, Seattle, Washington	Alaska and Kenai Peninsulas	Geologic reconnaissance, leasing
Standard Oil Co. of California 225 Bush St., San Francisco, Calif.	Katalla—Yakataga province and Kenai and Alaska Peninsulas	Leasing—Performance contract with Dept of Interior on large acreage
Sunray Mid-Continent Oil Co., Tulsa, Oklahoma	Kenai Peninsula	Geologic reconnaissance, leasing
Texota Oil Co., Fort Worth, Texas	Kateel River area Interior Alaska province	Geologic reconnaissance, leasing Associated with Brooks-Scanlon Oil
The Texas Co., Box 2332, Houston, Texas	Alaska in general	Preliminary reconnaissance
Union Oil Co., Los Angeles, California	Kenai and Alaska Peninsulas	Leasing-Unit agreement with Richfield and Ohio

LIST OF REPORTS ISSUED BY THE COMMISSIONER OF MINES AND CORRESPONDING PRECEDING OFFICIALS

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*Report of the Mine Inspector for the Territory of Alaska to the Secretary of the Interior, fiscal year ended June 30, 1913.

*Report of the Mine Inspector for the Territory of Alaska to the Secretary of the Interior, fiscal year ended June 30, 1914.

*Report of the Territorial Mine Inspector to the Governor of Alaska for the year 1915.

*Report of William Maloney, Territorial Mine Inspector, to the Governor of Alaska for the year 1916.

*Report of the Territorial Mine Inspector to the Governor of Alaska for the year 1917.

*Annual Report of the Territorial Mine Inspector to the Governor of Alaska, 1920.

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*Report upon industrial accidents, compensation and insurance in Alaska for the biennium ending December 31, 1924.

*Report of the Territorial Mine Inspector, calendar years 1925-26.

*Report of cooperation between the Territory of Alaska and the United States in making mining investigations and in the inspection of mines for the biennium ending March 31, 1929.

*Report of cooperation between the Territory of Alaska and the United States in making mining investigations and in the inspection of mines for the biennium ending March 31, 1931.

*Mining investigations and mine inspection in Alaska. biennium ending March 31, 1933.

*Report of the Commissioner of Mines to the Governor, biennium ending December 31, 1936.

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*Joseting, Henry R., Strategic mineral occurrences in interior Alaska: Pamphlet No. 1, May 1942.

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*Stewart, R. L., Prospecting in Alaska (26-page pamphlet), December 1944. (Revised to November 1949)

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Rights of Canadians in Alaska under the Mining Laws; Information Circular No. 2, September 15, 1953.

Hints for Prospectors on the Mainland of Southeastern Alaska; Information Circular No. 3, March 15, 1954.

Alaska Uranium Information; Information Circular No. 4, December 15, 1954.

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General Alaskan Mineral Information; Information Circular No. 5, March 15, 1955.

Alaskan Prospecting Information; Information Circular No. 6, April 15, 1956.

* Out of print. On file in certain public and university libraries.

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