

AR 1948

DEPARTMENT OF MINES
TERRITORY OF ALASKA

Report

of the

Commissioner of Mines

for the

BIENNIUM ENDED DECEMBER 31, 1948

Honorable Ernest Gruening
Governor of Alaska
Juneau, Alaska

Sir:

I have the honor to submit to you, and through you to the Nineteenth Session of the Territorial Legislature, in accordance with Section 3, Chapter 80, Session Laws of 1935, the report of the Commissioner of Mines for the biennium ended December 31, 1948.

Respectfully yours,

B. D. STEWART,
Commissioner of Mines.

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THE DEPARTMENT OF MINES

Administrative and General Information

The staff of the Alaska Department of Mines conducts a continuing survey of mineral resources and mining operations, disseminates information with regard thereto, safeguards the lives and health of miners, protects so far as possible investors in the mining industry, and operates three public assay offices. The Commissioner of Mines directs the activities from his headquarters at Juneau. The staff under his direction during the biennium included two associate mining engineers whose headquarters are at Juneau and College; one associate mining engineer at Anchorage whose services are devoted wholly to coal mine inspection; three assayers stationed at Ketchikan, Anchorage and College; one clerk and one clerk-stenographer in the headquarters office at Juneau. The Commissioner of Mines also acts as district mining supervisor for the Interior Department in connection with the supervision of mining on coal leases and permits.

Information on matters relating to mining and mineral resources is disseminated by means of personal interviews and by correspondence at the headquarters and field offices. Extensive files of reports by field engineers on individual properties, prospects and small areas, together with a complete library of publications on Alaska that have been issued by the U. S. Geological Survey and U. S. Bureau of Mines, are the basis for the information that is disseminated. Consulting service is available to the various local departments and agencies of the Federal and Territorial governments. A considerable number of requests for this service were received during the biennium. Collections of classified rocks and minerals are maintained at the various offices for comparison with specimens brought in by prospectors and others. Collections of Alaskan specimens are also maintained for similar use. Considerable interest was shown in these collections during the biennium, especially radioactive materials, with which most Alaskan prospectors are unfamiliar. No reports were published during the biennium, although a report on placer mining methods in Alaska is in preparation. A list of all reports that have been issued by the Commissioner of Mines and corresponding preceding officials is appended to this report.

Visitors at the headquarters and field offices averaged during the biennium approximately 300 per month. Information requested included suggestions as to favorable areas for prospecting, publications and information on individual districts or properties, identification of specimens, markets and prices of minerals, laws governing the location and holding of claims, assessment requirements, etc. Several requests for examination and mapping of undeveloped and partially developed prospects were also re-

ceived. Requests by mail for similar information numbered several thousand, in addition to which were numerous inquiries from the States with reference to employment in the mining industry. Approximately 4,000 publications were distributed during the biennium, most of which were reports of the Department of Mines, the remainder being Government maps and bulletins from the small supply that is available at the headquarters and field offices for the convenience of the public.

Field Investigations and Mine Inspection

Technical assistance was given by engineers in the field, upon request, in connection with prospecting and development programs. Field investigations during 1947 were curtailed due to the availability of only one associate mining engineer for this purpose. Examinations were confined to gold-silver, base metal, and non-metallic deposits in the Chichagof, Sitka, Hyder, Ketchikan and Prince William Sound districts. Pumicite deposits at Mt. Edgecumbe on Kruzof Island, on Augustine Island, and in the Shelikof Strait area, were investigated as to suitability for use in the manufacture of light-weight building material. Development of deposits on Augustine Island and near Katmai National Monument proceeded during the biennium. Two experimental plants were constructed at Anchorage and some building material was produced.

Two associate mining engineers conducted field investigations during 1948. Gold-silver, base metal, and barite occurrences were examined in the Hyder, Ketchikan, Wrangell and Petersburg districts. A gold-antimony occurrence near Windham Bay was also examined. Investigations in the Third Division included antimony and gold deposits on Kenai Peninsula, lead-zinc occurrences near Lake Clark, the Willow Creek gold lode district, and the placer mines of the Valdez Creek district. Lode and placer deposits were examined in the Fairbanks, Livengood, Hot Springs, Rampart, Healy River, Mt. Russell and Mt. Foraker, and Nixon Fork districts. The placer camps of Seward Peninsula were visited, and the lead deposits in the Omilak district were examined. The engineer who visited the Second Division also cooperated at the request of a private group in its investigations of graphite deposits of the Imuruk Basin.

Safety inspections were made at operating mines visited by engineers. Unsafe conditions were pointed out and recommendations for improving working conditions were made where necessary. One municipal tunnel project near Ketchikan was inspected and was being conducted in accordance with safety regulations. Monthly and semimonthly inspections are made at the operating coal mines by an engineer stationed at Anchorage who devotes full

time to this work to maintain as nearly as possible safe working conditions in a type of mining that is naturally hazardous.

Assay Offices

The assay offices at Ketchikan, Anchorage and College continued to perform prompt and reliable mineral determinations, which service is important to prospecting for and development of mineral resources of Alaska. The building that formerly housed the assay office at Nome was released at the request of the owner, and the equipment was stored. An insufficient appropriation was allotted by the 1947 Legislature to operate four assay offices, and that at Nome remained closed the entire biennium. The office will be reopened at such time as funds are available for its operation, suitable quarters are obtainable, and an assayer-engineer with the necessary qualifications can be employed.

In spite of conditions unfavorable to the mining of gold, it is evident that prospectors continue the search for deposits containing this metal, as reflected by a substantial increase over the preceding biennium in the number of requests for gold-silver assays. A small decrease from the previous biennium in the number of requests for determinations of base metals is surprising on account of the favorable market conditions of copper, lead, zinc, antimony and tungsten. Increased interest in radioactive minerals, under stimulus of encouragement by the Government, was indicated toward the end of the biennium by the increase in requests for tests on minerals suspected of being radioactive. The trend in the number of determinations made at all offices during the past two biennia is revealed in the following table:

	1945	1946	1947	1948
Gold-silver	1091	1083	1506	1016
Chemical determinations	616	259	428	373
Identifications	534	527	437	679
Totals	2241	1869	2371	2068

The assayer stationed at College, in addition to his assaying service, proceeded to Nome for the purpose of closing that office and storing the equipment, made a field investigation at Tolovana Hot Springs, and conducted investigations of building materials along the Railroad belt. The assayer stationed at Anchorage, in addition to his regular duties, conducted field investigations in the Prince William Sound region, at Augustine Island, Valdez Creek district, and along the Railroad belt near Anchorage.

THE MINING INDUSTRY

The biennium of 1947-1948 has seen a gradual but slow overall recovery of Alaska's mining industry. Adverse economic

conditions, poor supply of skilled labor, lack of dependable maritime service, together with an acute shortage of highways and access roads have all combined to handicap and render uneconomic the prospecting or operation of many of Alaska's known mineral occurrences. High wages offered on Government projects have made it difficult for mining companies to maintain proper operative crews. This, coupled with steadily rising supply costs and other obstacles, has tended to discourage venture capital in Alaska.

This adverse picture has been partially offset by an increased activity in non-metalliferous mineral deposits such as sand, gravel, limestone, and coal where increased operating costs can be passed to the consumer.

Rising market prices for base metals, such as lead, zinc, copper, and antimony, have served to stimulate prospecting and development activity in that field.

Gold mining, the backbone of the Alaskan mining industry, has never recovered from the crippling closure order invoked by the Federal Government during the second World War. An anticipated rise in price of gold has failed to materialize, although operating costs in many cases have risen over 100 percent above pre-war levels. As a result of this, many properties formerly profitable are now too low grade to mine. Others have had to seriously reduce their minable ore limits, thus greatly shortening their lives. This, of course, is reflected in decreased employment, reduced payrolls, and a lessened mining income for the Territory. Few new companies have entered the gold mining field but there has been a gradual resumption of activity at properties established prior to the war. This is reflected in a gradual increase in gold production from its low during the war years. During 1947, gold production increased over 23 percent above production in 1946. The figures for 1948 are not yet complete but a larger number of dredges and draglines were in operation and it is probable that gold production for 1948 will show an increase over the preliminary estimate.

A small amount of relief was afforded a few placer gold operators on the discovery that the Government does not require natural gold to be sold to the Mint. As a result, placer gold for speculative purposes is selling for approximately 40 dollars an ounce as mined. Most operators, however, were not in a position to take advantage of this situation.

Although coal production in 1947 dropped slightly below the figure for 1946, the production for 1948 set a new Alaska high with approximately 410,000 tons being mined. This exceeds by 43,000 tons the previous record of 1946.

The Government bonus of \$10,000 for the first 20 tons of ore or concentrates assaying 20 percent or better in uranium oxide from a new mine, plus a Government guaranteed minimum price for ore or concentrates, has stimulated strong interest in radioactive minerals. The Territorial assay offices have been equipped with samples of uranium-bearing minerals and Geiger counters for detection of radioactive ores, and every effort is being made to assist prospectors interested in the search for these minerals.

Future of the Industry

The immediate future for the mining industry in Alaska is not encouraging. As long as the present adverse economic conditions prevail, the industry cannot be expected to operate at a normal capacity. However, this condition is probably temporary. The population drift to the western states, with the resultant increase in western industrialization should, in the future, create an increasing demand for both metallic and non-metallic minerals known to exist in Alaska. In the not distant future, Alaska should be called on to supply its wealth of mineral resources in ever increasing amounts to the industrial machine of the west.

Large areas of Alaska have been little prospected. Slowly, but gradually, roads are being built and transportation improved, so that these areas will be able to contribute their share to the nation's economy. Development of air-cargo service has been important and really saved the people of Alaska from a serious situation during the crippling maritime strikes. Extending such service into remote regions should encourage prospecting and development, in some cases to the point where roads into the areas would be justified.

At present, the gold mining industry is suffering an economic depression. With costs of operation high and price of gold low in comparison thereto, there can be no major activity by the industry in the near future unless the Government revises the value of gold upward or allows the industry to sell on the open market of the world. Since this industry is the backbone of Alaska mining, it is of the utmost importance that it receive all encouragement possible if a stable Alaskan mining economy is to be maintained.

With southeast Alaska soon to become the scene of large-scale logging operations for the pulp industry, it is probable that numerous unknown mineral occurrences will be discovered. Access roads, skidding of logs, and removal of timber and brush in mineralized areas should lead to the discovery of new mineral deposits.

While gold placer operations will probably continue to effect a partial recovery from a war-time low, gold lode operations have virtually no chance for recovery until conditions affecting them

are considerably improved. Many lode properties are flooded, mine openings are caved, machinery has deteriorated, and operating costs have risen so that many of these properties are economically impossible to operate. This is a particularly unfortunate situation, as millions of dollars of investment capital is thus lying idle, producing no wealth and no revenue.

Alaska contains enormous coal resources available for future development. A possible market will be created if proposed iron and steel plants are built on the Pacific Coast. An export trade with the Orient may be developed in the future when present unrest in that area is settled. Considerable interest has recently been shown in the possibility of establishing plants in Alaska for converting coal into liquid fuels and other marketable by-products such as char and briquets.

While little information is available on the results of the oil drilling program on Naval Petroleum Reserve No. 4—the area north of the Brooks Range—present indications seem to point toward Alaska becoming an important producer of petroleum.

Unprospected and undeveloped occurrences of copper, lead and zinc are widely distributed in Alaska. Prices for these minerals are favorable, but adverse factors, such as the high cost of transportation, labor and supplies, have prevented more than casual interest by venture capital in developing such occurrences to the point of determining those of commercial importance. At such time as conditions are sufficiently favorable to attract venture capital, it seems probable that Alaska will become an important producer of base metals.

There has been an increased interest by prospectors in radioactive minerals in the Territory. Several areas are known to be favorable for their occurrence and it is quite probable that Alaska will in the future become a supplier of these critical minerals.

A healthy trend toward a more diversified mining industry is becoming apparent. Increased production of sand, gravel, brick, and building blocks, together with a larger coal production and an increased oil exploration activity, point toward a more stable mining economy.

Lode Mining

A general downward trend of activity in lode mining was noted during the biennium. Most of the activity was intermittent and several companies that attempted to start operations closed entirely. None of the major operations, such as Alaska Juneau, Independence, or Hirst Chichagof were in production. Prospects on which some development work was done are listed as active. The number of metal properties being worked or developed de-

clined from 75 in 1946 to 67 in 1947. Only 66 lode mines showed any activity in 1948.

In 1947, five non-metal properties were active. This was an increase of three from the previous year. In 1948, only four were in operation.

Mine-mills were partially active at 15 properties in 1947. The number dropped to 11 in 1948.

Employment at lode mines, mills, and non-metallic producers declined during the biennium. While 446 men were employed in 1946, the number dropped to 384 in 1947, and to 309 in 1948.

In the Hyder district, the J. H. Scott Company operated the Riverside mine during the biennium. Gold, silver, lead, tungsten, and copper were recovered from the ore. This was the largest lode mining operation in Alaska during the biennium, with approximately 33 men employed.

In the Ketchikan district, activity declined in 1948 from the previous year. Alaska Gold and Metals Company was engaged in development and construction work during 1947 at the Salt Chuck mine. Work at this property was discontinued in June, 1948. A small crew was engaged in developing a small gold lode at the Blue Jay mine in 1947. The property was idle during 1948. Wendell Dawson actively operated a gold lode on Prince of Wales Island during 1947 and 1948. Concentrates were shipped to the smelter for both years. The Lucky Nell Mining Company was active with a small crew during 1947. Work was confined to construction on a seven-mile road and to building at the property. No work was done during 1948. The Montana Zinc and Lead Company operated the Mahoney property with a small crew during 1947. A mill was built and a small amount of concentrates was shipped. The property also operated in 1948. Santiago-Alaska Mines, Inc., continued surface development at Dolomi in 1947. About 22 men were employed. A smaller crew was engaged in mine rehabilitation during 1948.

The Permanente Cement Company was actively engaged in quarrying limestone on Dall Island during 1947 and 1948. An average of nearly 5,000 tons of limestone a week was shipped to Washington State for the manufacture of cement. From 18 to 22 men were employed at the quarry.

The City of Ketchikan was engaged in driving a water-power tunnel at Silvas Lake. About five men employed.

L. C. Berg was driving a development tunnel during 1947 on a lead-zinc deposit at Berg Basin near Wrangell. A diamond-drilling program was also being conducted. Work in 1948 was confined to diamond drilling. Alaska Metals and Power Company

confined its work at Groundhog Basin to road building in 1947. No activity was reported in 1948.

O. P. Schoonover did surface work on lead-zinc claims on Kupreanof Island near Petersburg in 1948. These claims were diamond-drilled by the U. S. Bureau of Mines during the latter half of the year.

The Edgecumbe Exploration Company was active with a small crew in 1947 and 1948 on development work at the Haley mine near Sitka. Development work was carried on at the Joe Bauer property on Herbert Graves Island during 1947. Five men were employed. The property was idle during 1948. The Slocum Arm Mining Company was developing and mapping a small gold lode on Chichagof Island during 1947 and 1948. A small crew was employed. Ole Twedt did a small amount of development work in 1947 and 1948 at his gold lode claims on Klag Bay near Chichagof.

The Alaska Juneau Gold Mining Company at Juneau did not operate during the biennium. However, about 35 men were employed, principally on maintenance work. This company normally employed over 1,000 men and produced over half of the lode gold in Alaska. The property was also a producer of silver and lead.

Louis Anderson was developing an antimony prospect on Douglas Island during the biennium. This prospect contains the first high-grade stibnite that has been reported in the vicinity of Juneau.

Herman Kloss and Jack Davis developed a very promising gold-antimony occurrence at Sunset Cove near Windham Bay during the biennium. Approximately 200 feet of tunnel and shaft have been driven, a small mill was constructed and operated intermittently. A unique feature of this deposit is the occurrence of metallic antimony along with stibnite (sulphide of antimony) in a wide quartz vein that carries high values in gold.

The Yankee Cove Gold Mining Company carried on trail work with a six-man crew during 1947, but the company was idle in 1948.

Alaska Lucky Strike, Inc., near Cordova, did a small amount of development work during 1947. No work was done in 1948. Stanley and Bruno Sacho were lode prospecting at Harrison Bay during 1947, but were inactive in 1948.

Martin Radovan was engaged in developing a copper lode near McCarthy during the biennium.

In 1947, a small crew was active in developing pumice deposits on Takli Island, Katmai National Monument, for the Pumice Block Company, Inc. No work was done by the company in 1948.

The Alaska Katmalite Corporation was active during the biennium developing pumicite deposits on Augustine Island.

Joe Thompson did a small amount of work in 1948 on a newly discovered lead-silver prospect on the Kijik River, tributary to Lake Clark.

There was intermittent activity in the Seward precinct during the biennium. The Last Chance mine in the town of Seward was actively prospected. Some work was done on the Oracle Extension, the New Hope-Hirshy and the Gold Mint mines during both years of the biennium. The East Point Mining Company, United Mining and Development Company, and the Grant Lake Company operated on a small scale in 1947. They were not active in 1948. The Falls Creek Mining Company was idle in 1947 but operated in 1948 with a crew of 10 men.

The Jewel and Monarch mines at Girdwood were active during 1947 and 1948. A small crew engaged in development and the construction of a small mill. Clay Products Company, Inc. operated a brick plant in Anchorage during the biennium. Three men were employed.

Mining in the important Willow Creek gold lode district was far below normal. The Kelly-Willow Mining Company, Lonesome Gold Mine, and Fern Gold Mining Company operated throughout the biennium with small crews of three or four men employed at each. Their activities were confined to development work and construction. The Snowbird Mining Company and the Webfoot Prospect had crews of 8 to 10 men during the biennium engaged in prospect and development of gold lodes. Jacob Lane was developing a gold lode on Archangel Creek in 1947 and 1948. The Palmer-Mabelle gold mine was active in 1947, but no work was done on the property in 1948. The Barbara May prospect, Sidney Ridge prospect, and Gold Cord Mining Company had crews of from two to four men doing development work during 1948. The formerly important and productive Willow Creek Mines remained inactive during the biennium with only a watchman employed. A similar situation existed at the Independence Mine of the Alaska-Pacific Consolidated Mining Company, at which property up to 180 men were formerly employed.

Elsewhere in interior Alaska, William Green developed a gold lode on the West Fork of the Chulitna River during 1947 but was inactive in 1948. Fred Jenkins and associate were developing a nickel lode prospect near Eagle. In 1947, Frank Barrett prospected for gold lodes in the Fortymile precinct. Arthur Kreuger was lode prospecting in the Hot Springs precinct during 1948. The Sawtooth Mining Company developed an antimony lode near Rampart during 1948. Although only two men were employed, a consider-

able tonnage of high-grade ore was reported to be sacked ready for shipment.

In the Kuskokwim River region, I. W. Purkeypile was developing a silver-lead lode in the Tonzona district during 1948. B. A. Stone had a small crew developing a gold lode during the same year in the Nixon Fork district. During both years of the biennium, the Nixon Fork Mining Company was active with a crew of six men. The property is located on the Nixon Fork of the Kuskokwim River and was a small but steady gold producer prior to the war. The Decoursey Mountain Mining Company was active on a small scale during the biennium. The property is a small producer of mercury and is located on Crooked Creek, a tributary of the Kuskokwim River. No activity was reported during the biennium at the Red Devil mine of the Kuskokwim Mining Company, although the mine was the most important producer of mercury in the Territory during the war period.

D. E. Turnbarger, George Swanson, and the Alaska Mining Company were active in 1947 in the Fairbanks precinct, but there was no activity at these mines in 1948. The Alaska Antimony Mining Company, Trury Anderson and the Hi Yu Mining Company were developing lodes in 1948. Gilbert Monroe, Basil Sinclair, and Howard Sparks were also actively engaged in developing lodes in 1948. Bartholomae Oil Corporation had a small crew on maintenance and development at the Ryan gold lode near Fairbanks during the biennium. Earl Beistline and associates carried on development work at the Happy Creek mine in 1948 with a crew of five men. Cheechako Mining Company and Cleary Hill Mines operated during the biennium on a small scale. Kaye Brothers were actively developing a small gold lode at Ester Dome during the biennium. In 1947, Stampede Mines employed 10 men on the development and mining of an antimony lode in the Kantishna district. Three men were employed during 1948. This mine has produced most of the antimony ore that has been mined in Alaska.

Farrell-Mallory, Inc. sampled and did some development work on a lead-silver prospect on Independence Creek, tributary of Kugruk River in northwestern Alaska, during 1947. C. O. Roberts operated the Big Hurrah gold lode and mill in 1947 and 1948 in the Nome district. A small crew was employed. Ralph Lomen and associates developed a gold lode on the Shamrock property in 1947. Five men were employed at the property which is on Solomon River near Nome. In 1948, Foster and associates were actively developing a lead occurrence on Fish River near Nome. A lead lode was being developed in 1948 on Brooks Mountain in the Nome district by a crew of two men. Alaska Graphite Syndicate employed a crew of five men in developing and sampling a graphite deposit on the south shore of Imuruk Basin in 1948. Several tons

of graphite was mined and shipped from this area during the first World War.

Arctic Circle Exploration, Inc. engaged in a small amount of development and maintenance on its asbestos and jade property on Dahl Creek, tributary of the Kobuk River, during the biennium. Helcolicon Mines, Inc. prospected a copper lode on Salmon River, tributary of Kobuk River, with four men employed in 1948. Roy Larson and James Small were prospecting for both lode and placer deposits in the Kobuk River region in 1948.

Placer Mining

The placer mining industry is today serving as a weak crutch to a badly crippled Alaskan mining economy. Although placer mining has never regained its pre-war strength, it has effected a partial recovery much greater than that shown by lode mining. The importance of the well-being of this industry to Alaska cannot be over emphasized, when it is realized that with the exception of Federal Government expenditures, this industry is the chief source of income to large areas of interior Alaska.

In 1940, there were 4,270 men employed in placer mines in Alaska. The number declined during the war until only 556 men were employed in 1943. Since the end of the war the number has gradually shown an increase until in 1947 and 1948 the recorded employment was 1,824 men and 1,938 men, respectively. This reduced employment is, of course, reflected in reduced production. In 1940, placer gold production was 541,873 troy ounces. In 1947 and 1948, production was 276,443 and an estimated 215,200 troy ounces, respectively, or in 1947 about 51 percent of 1940 production. Over 95 percent of all gold produced in Alaska in 1948 came from placer operations.

The production figures of 1948 are subject to a revision upward, as final results for that year have not been completely tabulated. There are indications, too, that part of the 1948 production is being withheld for purposes of speculation on a rise in the price of gold. Such gold as is being withheld will probably not be credited to the year in which it was produced.

There were 25 dredges and 36 draglines active in Alaska during 1946. During 1947, the first year of the present biennium, 27 dredges and 35 draglines were in operation. During 1948, the number of dredges and draglines increased to 30 and 38, respectively. Bulldozer and hydraulic operations increased from 101 in 1947 to 102 in 1948. It is, therefore, probable that if total production figures for 1948 were complete, the production for 1948 would exceed that of 1947.

Bulldozer-hydraulic combinations are becoming increasingly popular in mining of placer gravels in Alaska. Initial investment costs are much lower than dredge costs and where applicable, the bulldozer-hydraulic combination provides a much more mobile type of operation.

General placer mining activity in the various precincts is listed below. A list of all active operations in 1948 will be found at the back of this report.

First Division:

There was little placer activity in the First Division during the biennium. Two companies were bulldozing tailings during 1948. The McGinnis Creek Mining Company, a hydraulic operation, was active a few miles north of Juneau in 1947 and 1948.

Second Division:

Cape Nome Precinct: Seven dredges operated in 1947, and the number increased to nine in 1948. Only one dredge was operated by U. S. Smelting, Refining & Mining Company in 1948, but 132 men were employed by the company, most of whom were engaged on maintenance on three other dredges owned by the company, stripping, thawing, etc. One bulldozer-dragline operation was active during both years of the biennium. Five companies were active in placer prospecting during the biennium. The Arctic Tin Company was developing tin placers in the York district in 1948. Twenty-six bulldozer-hydraulic operations were in progress during 1947. There were 31 bulldozer and hydraulic operations in 1948. Two companies were ground-sluicing during the biennium.

St. Michael Precinct: There was little activity in the St. Michael precinct during the biennium. Only the gold dredge of the Ungalik Syndicate was active.

Fairhaven Precinct: There were nine placer operations in the Fairhaven precinct during 1947. Of these, three were dredging operations, three were bulldozer-hydraulic, and one was placer drill prospecting. In 1948, three dredges, four bulldozer-hydraulic and two placer prospecting companies were operating.

Koyuk Precinct: An increase in placer activity was noted in the Koyuk precinct during the biennium. While only two companies were active in 1947, there were seven operations in 1948. Of these, one was a placer drift and three were bulldozer-hydraulic operations.

Noatak-Kobuk Precinct: Six companies were operating in the Noatak-Kobuk precinct in 1947, and seven companies were active in 1948. Lammers Exploration Company commenced dredging operations in 1947 on Ktery Creek, a tributary of Squirrel River and continued during 1948.

A well organized and systematic prospecting venture was being conducted during the biennium by Helcolicon Mines, Inc. in a formerly unprospected area on Salmon River, tributary to the Kobuk River, northeast of Kiana. Several college mining students were employed in the crew which was prospecting for placer and lode deposits. This type of prospecting is important to Alaska, and a number of such parties in the field would undoubtedly result in new mineral discoveries.

Wade-Hampton Precinct: Mining operations in the Wade-Hampton precinct during the biennium consisted of two dragline-bulldozer-hydraulic, one bulldozer-hydraulic, and one shovel-in.

Third Division:

Anchorage Precinct: There was little placer activity during the biennium in the Anchorage precinct. Only one company mined in 1947 and in 1948 there were no operators.

Chitina Precinct: Twelve companies were operating in the Chitina precinct during 1947. Of these eight were hydraulic operations. In 1948, nine operators were in the field, of which eight were hydraulic operations.

Iliamna Precinct: Harry Bowman was operating a bulldozer-hydraulic plant on Portage Creek, a tributary of Lake Clark. There were no other placer operations in the area during the biennium.

McCarthy Precinct: In 1947, three placer operations were active. Of these, two were hydraulic and one was a shovel-in operation. There were also three operators in the district during 1948.

Seward Precinct: There was little activity in the Seward precinct during the biennium. Two hydraulic companies operated in 1947, but only one operation was active in 1948.

Talkeena Precinct: There were 24 mining companies active in the Talkeena precinct during 1947. Of these, 14 were bulldozer-hydraulic operations, one was a placer drift, and the balance were prospecting or sniping. In 1948, there were 19 operations in the precinct, of which 13 were bulldozer-hydraulic.

Fourth Division:

Bethel Precinct: There were four operators in the Bethel precinct during the biennium. The New York Alaska Gold Dredging Corporation operated two gold dredges on the Tuluksak River during both years of the biennium. In 1948, the same company operated a dragline and washing plant in addition to the two dredges.

Fairbanks Precinct: Eighteen mining companies were active in the Fairbanks precinct during 1947. Of these, 14 were bull-

dozer-hydraulic operations. The U. S. Smelting, Refining & Mining Company operated five out of its eight gold dredges in the precinct in 1947 and six in 1948. This company is the largest gold producer in the Territory. Activity increased considerably in the Fairbanks precinct during 1948. Twenty-eight operators were active. Brinker-Johnson Mining Company commenced dredge operations on Caribou Creek in the Salcha district, after having been inactive the previous year. Yukon Placer Mining Company operated a gold dredge for part of the season on Canyon Creek in the Fortymile district. This dredge had been idle since 1941. Principal increase in operations during 1948 was in bulldozer-hydraulic plants.

Circle Precinct: Eleven mining companies were actively engaged in bulldozer and hydraulic mining during 1947. One dragline was active during the biennium. Three dredges were operated in the area during both years of the biennium by Alluvial Golds, Inc. on Woodchopper Creek; C. J. Berry Dredging Company on Mammoth Creek; and Gold Placers, Inc. on Coal Creek. There were 13 bulldozer and hydraulic operations in 1948. Several other small-scale operators were active during both years of the biennium.

Eagle Precinct: Six mining companies were active in the precinct during 1947. The number increased to eight during 1948, with two companies engaged in prospect drilling. The operations were predominantly bulldozer and hydraulic, and combinations of the two methods.

Ft. Gibbon Precinct: There was only a small amount of activity in the Ft. Gibbon precinct during the biennium. Two companies were active in 1947 and four in 1948. Dragline and bulldozer methods were used.

Fortymile District, Fairbanks Precinct: Sixteen mining companies were active in the Fortymile district in 1947. Fifteen of these were hydraulic-bulldozer operations. The number decreased to 13 in 1948, of which 4 were bulldozer-hydraulic operators.

Goodnews Bay District, Bethel Precinct: Goodnews Bay Mining Company operated a placer-platinum dredge during both years of the biennium. This operation is unique in that it is the only placer-platinum dredge in the Territory or in the United States. Two draglines were operated during the biennium, and also one bulldozer-type operation. One groundsluice operation was active both years of the biennium.

Hot Springs Precinct: There were 12 operators active in the Hot Springs precinct during 1947. The number increased to 13 during 1948. Seven of the operations were of the bulldozer-hydraulic type, and the balance were sniping or prospecting.

Innoko Precinct: Seven draglines were operated in the Innoko precinct during 1947. A gold dredge was operated by the Ganes Creek Mining Company on Ganes Creek both years of the biennium. Nine draglines were in operation in 1948. Two companies were mining by bulldozer-hydraulic methods in 1948 and one company was prospect drilling.

Koyukuk Precinct: Sixteen mining companies were active in the Koyukuk precinct during 1947. There were 18 operations in 1948. Two draglines and six bulldozers were in use, the balance being small-scale hydraulic, shovel-in, drift and groundsluice operations.

Kuskokwim Precinct: There was little activity in the Kuskokwim precinct during the biennium. Marvel Creek Mining Company engaged in dragline-bulldozer mining during both 1947 and 1948. Awe Mining Company was active in prospect drilling in 1948.

Mt. McKinley Precinct: Mining in the Mt. McKinley precinct was quiet during the biennium. Strandberg and Sons were engaged in stripping operations in 1947, and were the only operators in the district that year. Two operators were active in 1948.

Nenana Precinct: Nine companies were placer mining in this precinct during 1947, and the number decreased to eight in 1948. Of these, five were bulldozer-hydraulic type operations and the balance were using small-scale hydraulic and groundsluice methods.

Nulato Precinct: Eight companies were active in the Nulato precinct in 1947. The number decreased to six during 1948. Three draglines, three bulldozer-hydraulic, and one bulldozer stripping operation were active.

Otter Precinct: Eleven mining companies were active in the Otter precinct during 1948, which was one more than for the previous year. Five of these operated draglines and the balance were hydraulicking. North American Gold Dredging Company engaged in gold dredging operations on Otter Creek during both years of the biennium.

Rampart Precinct: Five companies were engaged in placer mining in the Rampart precinct in 1947. One dragline was in operation, and two bulldozer-hydraulic mines were active. Six operators were active in 1948.

Tolovana Precinct: Five mining companies were active in the Tolovana precinct during 1947. Livengood Placers, Inc., on Liven-good Creek, did not operate its gold dredge, but engaged principally in stripping, maintenance and repair work. Nome Creek Mining Company operated its dredge on Nome Creek during 1947 but did

not operate in 1948. However, activity in the area increased somewhat during the biennium, since three new operators entered the field. Two draglines were in operation, the balance being bulldozer-hydraulic and straight hydraulic mines.

Chandalar District, Fairbanks Precinct: There was little activity in the Chandlar district during the biennium. Ellis Anderson was engaged in drifting and shovel-in operations on Tobin Creek, and Eskil Anderson and associates were engaged in prospect drilling on Big Creek.

Coal Mining

Steadily increasing demand for coal in the Alaska Railroad belt and adjacent areas, during the past biennium, due principally to the requirements of military establishments and related activities, resulted in the largest output yet recorded in Alaska for a similar period. This demand for coal obtained despite the conversion of most of the locomotive equipment on the Alaska Railroad from the coal-burning-steam to the diesel-electric type and the almost universal substitution of oil-burning equipment for coal-burning furnaces and heaters in Anchorage and other towns and settlements in the southern half of the Railroad Belt.

The production of coal during the biennium 1947-1948 amounted to 761,500 tons, which exceeds that achieved during the preceding record-making biennial period by approximately 105,000 tons. Of this amount 362,000 tons was produced in 1947 and 409,500 tons in 1948. The value of this output is estimated to be about \$5,610,000. This value exceeds that of the output for the preceding biennium by approximately \$1,328,000.

The overall average price per ton of coal at the mine is estimated to have increased from \$6.20 during the biennial period 1945-1946 to \$7.25 during that ended December 31, 1948. It thus appears that, temporarily at least, the coal mining industry is in a flourishing condition.

Nenana Field: The increased coal production resulted almost entirely from enlarged and perfected strip-pit operations in the Nenana subbituminous coal-field, which were conducted at the Usibelli Mine in the upper Healy River section; at the mine of the Diamond Coal Company, about 4 miles southwest of Healy Station on the Alaska Railroad; and on a smaller scale on one of the large seams of coal at the Suntrana Mine of the Healy River Coal Corporation, where the seam outcrops in the gorge of Coal Creek, near the westerly boundary of the Company's property.

In 1947 the combined output of coal from the three stripping operations in the Nenana Field amounted to 70,860 tons valued at \$424,750. These production figures were practically doubled

in 1948, when the 3 pits yielded 140,500 tons of coal valued at about \$941,000.

The outstanding development in the Nenana Field, during the biennium, was the extensive removal with bulldozers and hydraulic-giants of the deep gravel and sandstone-overburden from a large area above the outcrop of the 45-foot No. 1 Coal Seam at the Usibelli Mine, which permitted full-scale extraction of coal by means of power-shovels at the two working-faces on opposite ends of the stripped section. This removal of overburden, which has been in progress and which has held back production of coal during the past 3 years, resulted in more than tripling the output of the mine within the biennial period. Other notable improvements at the Usibelli property included the installation of a modern tippie adjacent to the railway yards at Suntrana, where efficient screening and sizing of the coal is accomplished; and the erection of a diesel-electric power plant, and an office building with residential quarters on the Company's property at Suntrana. The auto-truck road, leading from the mine to the tippie, a distance of about 3 miles, has been greatly improved and has been extended from its former terminus at the top of the tippie, 200 feet above Healy River, along the sides of a very precipitous ridge to the railway-yards near water-level at Suntrana. The extension, for a distance of several hundred feet, of the railway spur that serves the Usibelli tippie, which was completed during 1948, provides much needed track-storage space for empty gondolas and improved switching facilities and thus permits a steadier and augmented output from the mine.

The stripping operations of the Diamond Coal Company were continued during 1947 at the pit that was originally opened in 1943 by Lytle and Green Construction Company on property now known as the Parris-Doheny leasehold in the foothills of the Alaska Range about 4 miles southwest of Healy Station. Because the economic limit of stripping at this pit had been reached, operations were transferred during the summer of 1948 to another site situated about one mile farther west where a new pit was opened and from which extraction of coal commenced in October, 1948. Although correlation of the beds has not yet been definitely worked out, it is thought that the 15-foot seam on which the new pit is being developed is a different one from that mined in the old pit. The quality of coal in the new pit is reported to be substantially better than that of the seam previously mined.

The Diamond Coal Company established during 1948 a new permanent camp near the modern tippie which was erected adjacent to the railway line about half a mile north of Healy Station. This camp includes a garage capable of accommodating the large excavating and haulage equipment used by the company, a well equipped machine shop, and a warehouse, all of which are on

concrete foundations and fully insulated, as is also the tipple structure. Also included is a commodious log office building with living quarters for the company officials. Another major improvement completed by the company is an entirely new auto-road approximately 4 miles in length that connects the tipple and camp with the new strip-pit and another similar road one-half mile in length that leads from the tipple to the railway station at Healy.

At the Suntrana Mine of the Healy River Coal Corporation underground mining continued on approximately the same scale as during the preceding biennium. A notable feature of the recent underground operations at this mine has been the introduction for the first time of mechanical equipment in the form of duck-bill loaders and shaking conveyors, which are now being successfully used at the gangway headings on two of the seams that are under active development.

Improvement has also been noted in the mining methods being employed and the results achieved in the extraction of coal from the 24-foot No. 3 Seam, which unusually difficult operation has given serious trouble in the past.

Improvement of the surface plant at the Suntrana Mine in the recent past has included installation of new, large steam-boilers in the power plant; widening and lengthening the tipple-structure; the installation of additional screening and sorting equipment and enlargement of bin capacity, all of which has greatly facilitated preparing and handling the coal for shipment. Several additional residences, fully equipped with modern appliances, have also been built to accommodate the families of married employees.

The total output of subbituminous coal from the Nenana Field during 1947 amounted to 189,470 tons, valued at \$1,151,000. The production from this field during 1948 totalled 260,500 tons having an estimated value of \$1,706,000.

Matanuska Field: The production of bituminous coal from the Matanuska Field declined slightly during the biennium, due principally to shutdowns to permit of major repairs and improvements both underground and in the surface plant at the Jonesville Mine of the Evan Jones Coal Company, from which most of the output of the field was derived. A slight increase in the price per ton received for coal at the mine partially offset the effect of the small decrease in yield and the value of the annual output was well maintained.

A major improvement underground at the Jonesville Mine was the practical completion during 1948 of the retimbering of the half-mile-long cross-cut adit that serves as the entry tunnel and main haulageway of the mine. This difficult retimbering job has been in progress during the past two years. The haulageway through the mine is now in excellent condition.

During the past biennium the combined tipple-structure and washery-building at Jonesville was almost completely rebuilt while the plant was still in full operation. All belt and chain-transmission installations were replaced with individual motor-drives on each piece of power-driven equipment in the washery. This arrangement has eliminated many hazards to safety that formerly existed and has greatly improved the working-space and efficiency of the plant.

All camp buildings, including the tipple and washery, have been covered externally with sheet-aluminum sheathing, which serves as an important protection from fire and also gives the surface plant an attractive appearance. Notable improvements have also been made in facilities for handling and disposing of the refuse from the washery, much of which has been employed in extending the yards to provide building space for a new diesel-power-plant, a machine shop and other structures; storage-areas for equipment, timbers, etc.; and also in constructing an extensive parking-lot for the numerous automobiles that have been put to use by employees of the mine since the company constructed its branch auto-road that gives access to the mine-plant from the Glenn Highway near Sutton.

In an effort to expand the bituminous coal-reserves of the Matanuska Field the Department of the Interior has been conducting, under the direction of the U. S. Bureau of Mines, a diamond-drilling program in the vicinity of the Eska Mine, which is now closed, and in a hitherto unexplored area about one mile east of there. Drilling in the latter area, which was completed in the fall of 1948, is reported to have established the presence of a minable body of coal on and in the vicinity of land held under permit by Carroll Brothers of Palmer, who plan to develop it under the name of the Knob Hill property.

Additional drilling, during 1949, under the same auspices, is planned to be undertaken in an area west of the Jonesville mine, for which project an access road from Jonesville has already been commenced.

Small-scale operations were resumed during the fall of 1948 at the Premier Mine of the Alaska Matanuska Coal Company, on Moose Creek at the northwesterly end of Wishbone Hill. A small production was made from near-surface remnants remaining above water-level on the several coal seams in the flooded slope-workings of the old mine, which in the past has yielded a large tonnage of exceptionally high-grade bituminous coal.

The Buffalo Mine of the Buffalo Coal Mining Company, which is located above the Premier property on Moose Creek, remained idle during the biennium, as did also the formerly productive Black Diamond and Howard-Jessen properties on upper Moose Creek.

The Moose-Creek section of the Matanuska Field is capable of yielding a large tonnage of very high-grade bituminous coal, but the faulted condition of the beds in that area makes development and mining of the coal difficult and expensive.

In the vicinity of Houston Station, about 14 miles northwest of the town of Wasilla, the Alaska Railroad traverses an area which is underlain by coal-seams, which probably represents a westerly extension of the Matanuska field. A small underground mine at Houston supplied coal to construction camps engaged in building the railroad about 1915 to 1918, but operations were discontinued when the mines at Eska and Chickaloon came into production. During the period from 1940 to 1945 efforts were made by Evan Jones and associates to open a mine on a flat-lying seam of coal which outcrops east of the railway a short distance north of Houston Station. A 4-degree slope was driven on the seam and a small production was made, for handling which a short railway-siding was constructed at Houston. It was found, however, that a rock horse about 3 feet in thickness separated the coal seam into two sections, which rendered underground mining too expensive to continue. During 1948 a permit to mine coal on this area was obtained by Tucker & Peterson, of Anchorage, who, under the firm name of Houston Coal Mining Company, made during the summer and fall, quite extensive preparations for opening a stripping-pit on the property, which will be the first such operation in the Matanuska field.

A series of test holes were sunk to determine the depth of overburden and thickness of coal at suitable intervals and an area 600 x 30 feet in extent was stripped with a power-shovel before heavy freezing and drainage difficulties compelled cessation of operations for the winter. An auto-truck road has been built from this initial strip-pit, which is a short distance northeast of the Evan Jones slope, to the tippie, which has been constructed adjacent to a new railway-spur about $\frac{3}{4}$ -mile distant and in a westerly direction from the pit. About midway on this road a substantially built camp has been erected. It is planned to commence in 1949 productive operations at the strip-pit as soon as weather conditions will permit.

Cook Inlet Field: Small-scale coal mining operations were continued during the biennium at the property of the Homer Coal Corporation, formerly known as the McNally-Maitland mine, but production was limited to the needs of the local settlers on Kenai Peninsula in the vicinity of Homer and Seldovia.

Point Barrow Field: Coal for use by the Eskimo inhabitants at Barrow, on the Arctic Coast, continued to be mined at the rate of about 1,000 tons per year at the Meade River mine, which was opened in 1943 by the Alaska Native Service at a point on Meade River about 70 miles south of Point Barrow.

A small permanent settlement with approximately 50 Eskimo inhabitants is reported to have been established at the mine, which gives direct employment to the male members of the community. This small mine has served to alleviate a very serious fuel problem for the inhabitants of the Point Barrow region.

Coal mining permits have been issued by the Interior Department covering deposits in the vicinity of Point Lay and a revival of interest in the well-known deposits near Wainwright and also those near Corwin, on the Arctic Coast, has also been in evidence during the past year.

The statistics on employment at coal mines that are tabulated elsewhere in this report show that the number of men engaged in mining coal during the period 1947-1948 averaged 273. This is fewer by 44 men than the number so employed during the biennium 1945-1946. Nevertheless, the tonnage of coal produced by the 273 men employed during the period 1947-1948 was greater by 105,000 tons than that produced by the 317 men who were employed during the preceding biennium.

This outstanding increase in output of coal mined per man employed was due not only to the expansion of stripping operations, wherein the yield per man is normally much greater than in underground mining, but also to the greater efficiency achieved in operations at the two principal underground mines that has resulted from the improvements that have been made in equipment being used, in methods of mining and handling the coal that are being employed, and from superior performance by individual employees working under competent supervision and with incentives provided by the employers.

The increase in efficiency of labor employed during the biennium in each type of coal-mining is displayed in the following tables:

Production from underground operations:

	Tons mined	Shifts worked underground	Tons mined per underground shift
1947	291,120	50,123	5.82
1948	268,550	41,438	6.54

Production from stripping operations:

	Tons mined	Shifts worked	Tons mined per shift
1947	66,420	9,272	7.2
1948	127,850	12,993	9.8

In considering the effect that increased strip-mining operations have had on coal production in Alaska during the past few

years. it is well to bear in mind that the tonnage of coal available for that type of mining is definitely limited and that the strippable reserves are being rapidly depleted. It is estimated that in the Nenana Field well over 99 percent of the known coal reserves remain to be mined by underground methods. In the Matanuska Field the percentage is even higher.

Oil Drilling

No drilling for oil was undertaken in the Territory by private interests during the past two years, despite the cancellation of restrictions on the holding of oil-lands in Alaska that had been in effect during the War Period.

Naval Petroleum Reserve No. 4, which embraces that section of the Arctic slope that lies north of the Brooks Range and west and north of the drainage basin of the Colville River, is the only section of Alaska wherein private exploration for oil and the drilling of oil-wells is now prohibited, areas that formerly were withdrawn from entry by Public Land Orders having been reopened for acquisition and development under the Mineral Leasing Acts.

Exploration and drilling for oil on the Arctic slope of Alaska under the program that was initiated by the U. S. Navy in 1944 continued actively during 1947 and 1948, but no information is available as to the progress of the work or its results.

PRODUCTION

Mineral production of Alaska in 1946, 1947, and preliminary estimates for 1948, as compiled by the U. S. Bureau of Mines, is displayed in the following Table I. All minerals produced in 1947 had a valuation of nearly \$6,000,000 more than for the previous year. The decrease of nearly \$2,000,000 from the previous year on the value of gold produced in 1948, indicated by the preliminary estimate of the Bureau of Mines, is surprising in view of an increase in the number of dredges and draglines in operation. It is possible that the estimate will be revised upward after final returns for 1948 have been compiled. The tonnage of coal produced in 1948 set a new high, and exceeded the previous record year of 1946 by over 40,000 tons.

TABLE I
Mineral Production of Alaska, 1946-1948

	1946		1947		1948 (estimate)	
	Quantity	Value	Quantity	Value	Quantity	Value
Antimony ore .....	.....	.....	40	\$ 16,056	.....	.....
Coal, bituminous and lignite	366,809	\$ 2,339,952	349,000	(1)	410,000	\$ 2,870,000
Copper	do.	648	12	5,040	19	8,322
Gold	fine ounces 226,781	7,937,335	279,988	9,799,580	226,323	7,921,305
Lead	short tons 115	25,070	264	76,032	309	108,150
Mercury	flasks (76 pounds) 699	68,670	127	10,635	.....	(1)
Ores (crude) etc.:						
Copper	short tons	.....	.....	.....	.....	.....
Dry and siliceous (gold & silver)	8,979	(2)	8,327	(2)	.....	.....
Lead	do.	(2)	5,064	(2)	.....	.....
Zinc	do.	.....	500	(2)	.....	.....
Platinum metals (crude)	troy ounces 22,882	(1)	13,512	(1)	.....	(1)
Silver	do. 41,793	33,769	66,150	59,866	58,497	52,940
Tin (metallic equivalent)	short tons	.....	1	2,200	.....	.....
Tungsten (60 percent concentrates)	do. 19	(1)	13	(1)	.....	.....
Zinc	do.	.....	25	6,050	12	3,192
Miscellaneous 3/ .....	.....	2,005,241	.....	8,411,319	.....	4,436,021
Total value .....	.....	\$12,430,000	.....	\$18,387,070	.....	\$15,400,000

1/ Value included with "Miscellaneous."

2/ Not valued as ore; value of recoverable metal content included with metals.

3/ Comprises value of sand, gravel and stone, and value of items indicated by footnote 1.

Note: Above statistics compiled by Economics and Statistics Division, U. S. Bureau of Mines.

METAL PRICES

The following table, published on January 5, 1949 by E. & M. J. Metal and Mineral Markets, indicates the upward trend in prices for some of the more common metals. Quotations on January 6, 1949 were: Copper, domestic refinery—23.2¢ lb., export refinery—23.43¢ lb.; Tin, New York—103¢ lb.; Lead, New York—21.5¢ lb., St. Louis—21.3¢ lb.; Zinc, East St. Louis—17.5¢ lb.; Silver, New York—70¢ oz., Treasury price on newly mined—90.5¢ oz.; Platinum, wholesale—\$93 oz., sales to consumers—\$96 oz.

TABLE II
Yearly Average Prices—1947-1948
(E. & M. J. Averages)

	1947	1948
Copper, domestic, f.o.b. refinery, c/lb.	20.958	22.038
Copper, export, f.o.b. refinery, c/lb.	21.624	22.348
Lead, common, New York, c/lb.	14.673	18.043
Lead, common, St. Louis, c/lb.	14.470	17.843
Zinc, Prime Western, St. Louis, c/lb.	10.500	13.589
Tin, Straits, New York, c/lb.	77.949	99.250
Silver, foreign, New York, c/oz.	71.820	74.361
Quicksilver (per flask 76-lb.)	\$83.742	\$76.489
Antimony, domestic, New York, c/lb.	34.852	38.168
Platinum, refined, oz.	\$59.087	\$86.252
Cadmium (producers' quotation), c/lb.	171.780	182.554
Aluminum, 99 plus percent, ingot, c/lb.	15.000	15.733
Magnesium, ingot, c/lb.	20.500	20.500

EMPLOYMENT AND ACCIDENTS AT MINES

The following Table III reveals the trend of employment in the mining industry from 1914, the first year for which records are available, through 1948. Accidents and employment at the various types of mines are shown for each year of the biennium in Table IV. 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 V.

TABLE III
Employment at Mines, 1914 to 1948, 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	4,141
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	1,055	249	3,489
1943	556	521	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	584	280	2,488
1948	1,938	309	267	2,514

TABLE IV

Summary of Accidents and Employment at Mines in Alaska
1947-1948

(1947)							
Number of Mines	Group	Number of Men Employed	Number Shifts Worked	Results of Accidents			Total Time Lost (Days)
				Fatal	Serious	Slight	
PLACER MINES:							
27	Dredges	893	260,356	0	15	49	854
35	Draglines	273	49,140	0	1	0	15
101	Dozer-Hydraulic ..	372	59,520	0	0	0	0
146	Others*	286	42,900	1	0	0	0
309		1,824	351,916	1	16	49	869
7	COAL MINES:						
	Underground	167	50,123	1	15	21	518
	Surface	113	30,568	0	3	8	128
		280	80,691	1	18	29	646
LODE MINES:							
67	Metal**	308	72,172	1	0	3	11
5	Non-metal***	36	6,339	0	2	2	98
72		344	78,211	1	2	5	109
MILLS:							
18	Metal	40	7,150	0	0	1	1
406	Totals	2,488	517,968	3	36	84	1,625
(1948)							
PLACER MINES:							
30	Dredges	1,022	240,106	0	17	36	859
38	Draglines	323	58,140	0	1	0	110
102	Dozer-Hydraulic ..	337	53,920	0	0	0	0
135	Others*	256	38,400	0	1	0	34
305		1,938	390,566	0	19	36	1,003
COAL MINES:							
6	Underground	147	41,438	1	9	30	411
2	Surface	120	32,835	0	6	3	202
8		267	74,273	1	15	33	613
LODE MINES:							
66	Metal**	252	55,003	0	1	2	242
4	Non-metal***	33	7,469	0	1	1	40
70		285	62,472	0	2	3	282
MILLS:							
11	Metal	24	4,130	0	1	1	40
394		2,514	531,441	1	37	73	1,938

*Includes hydraulic, shovel-in, sniping, drifting and prospectors.

**Includes prospectors and intermittent operations.

***Includes quarries.

Fatalities

Year 1947:

Three fatalities resulted from accidents at mines in Alaska during 1947—one each at a coal mine, placer mine and lode gold mine. The causes that lead to the fatalities, and the mines at which they occurred, are as follows:

1. Overcome by carbon monoxide while inspecting mine workings and hanging brattice at the mine of the Evan Jones Coal Company.

2. Buried and suffocated by cave of bank at the hydraulic stripping operations of the U. S. Smelting, Refining & Mining Company near Fairbanks.

3. Struck over heart by fragment of emery wheel that broke up due to excessive speed of operation at the property of the Snowbird Mining Company in the Willow Creek district.

Year 1948:

Only one fatality resulted from accidents at mines in Alaska during 1948. It was caused by a fall of coal from the roof at the mine of the Evan Jones Coal Company.

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

Year	Man-Shifts Worked at			Fatalities			Non-Fatal 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	483
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

LIST OF MINING OPERATIONS IN ALASKA, 1948

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REPORT OF COMMISSIONER OF MINES

Name and Address of Operator	Name and Location of Mine	Precinct	Type of Operation	Approx. Crew
Adamik, Martin, Circle	Boulder Cr., trib. Coal Cr.	Circle	Hydraulic	1
Agoff, Harry, Flat	Prince Cr.	Otter	Hydraulic	3
Ahlner, Klas	Dan Cr.	McCarthy	Hydraulic	1
Aho, John & Assocs., Ophir	Upper Dominion Cr.	Innoko	Bulldozer	1
Alaska Antimony Mining Co., Fairbanks	Boulder Cr., trib. upper Tok R.	Fairbanks	Antimony lode development	4
Alaska Exploration & Mining Co., Talkeetna	Bird Cr.	Talkeetna	Hydraulic	3
Alaska Gold & Metals Co., Ketchikan	Salt Chuck Mine, Kasaan Bay, Prince of Wales I.	Ketchikan	Palladium-copper lode	15
Alaska Graphite Syndicate, Nome or 327 Colman Bldg., Seattle, Wash.	Graphite Cr., S. shore Imuruk Basin	C. Nome	Graphite development	5
Alaska Juneau Gold Mining Co., Juneau	Alaska Juneau, Juneau	Juneau	Gold lode and mill (maintenance only)	35
Alaska Katmalite Corp., Box 2125, Anchorage	Augustine I.	Iliamna	Pumicite stripping and mining	7
Alaska Matanuska Coal Co., Anchorage	Moose Cr., Matanuska field	Palmer	Coal mine development	3
Alaska Native Service, Barrow	Meade R., Pt. Barrow Dist.	Noatak-Kobuk	Coal mine	16
Alaska Placer Co., Nome or 327 Colman Bldg., Seattle 4, Wash.	Niukluk R., Council Dist.	C. Nome	Gold dredge	15
Alder Creek Mining Co., Meehan	Fairbanks Cr.	Fairbanks	Dragline-bulldozer	15
Alluvial Golds, Inc., Fairbanks	Woodchopper Cr.	Circle	Gold dredge	25
Amero, A. W., Chandalar	Big Cr., Chandalar Dist.	Fairbanks	Shovel-in	1
Amero, A. W., Chandalar	Little Squaw Cr., Chandalar Dist.	Fairbanks	Placer drift	4
Ames, Wm. O. & Cochran, W. L., Fairbanks	Cripple Cr., trib. Bettles R.	Koyukuk	Groundsluice & prosp.	2
Anderson, Calvin & Braid, Dennis, Fairbanks	Bigelow Bench, Goldstream Cr.	Fairbanks	Hydraulic stripping	2
Anderson, Ellis, Chandalar	Tobin Cr., Chandalar Dist.	Fairbanks	Placer drift	1
Anderson, Eskil & Assocs., Anchorage	Big Cr., Chandalar Dist.	Fairbanks	Placer prospect drilling	4
Anderson, John A., Miller House	Mastodon Cr.	Circle	Hydraulic	1

Anderson, Louis, Juneau	Eagle Cr., Douglas I.	Juneau	Antimony lode development	1
Anderson, Trury, Fairbanks	Pedro Dome	Fairbanks	Silver-lead prospect	2
Arctic Circle Exploration, Inc., 811 W. 7th St., Los Angeles 14, Calif.	Candle Cr., trib. Kiwalik R.	Fairhaven	Gold dredge	30
Arctic Circle Exploration, Inc.	Dahl Cr., trib. Kobuk R.	Noatak-Kobuk	Asbestos-jade development	3
Arctic Tin Co., Nome	Buck Cr., York Dist.	C. Nome	Bulldozer (placer tin)	5
Atwood, Merton & Granger, Douglas, Chicken	Stonehouse Cr. bench, Fortymile Dist.	Fairbanks	Bulldozer	3
Awe Mining Co., Flat	Chicken Cr.	Otter	Dragline-hydraulic-bulldozer	8
Awe Mining Co., Flat	Crooked Cr.	Kuskokwim	Placer prospect drilling	3
Backstrom, Gus, Flat	Head of Flat Cr.	Otter	Hydraulic	1
Baker, Ken & Davis, Forrest, Seward	Spruce Cr.	Seward	Gold lode prospect	2
Bartholmae Oil Corp., 1033 Brea Road, Fullerton, Calif.	Gold Run Cr., trib. American R.	C. Nome	Placer prospect drilling	3
Bartholmae Oil Corp.	Ryan Lode, Ester Dome	Fairbanks	Gold lode (maintenance)	2
Bauer, Richard, Eagle	Crooked Cr., trib. Seventymile R.	Eagle	Hydraulic	2
Beistline, Earl & Assocs., College	Happy Cr., Ester Dome	Fairbanks	Gold lode	5
Berg, L. C., Sitka	Berg Basin, Wrangell Dist.	Wrangell	Diamond-drilling lead-zinc lode	7
Berry Dredging Co., 1704 Sutter St., San Francisco 4, Calif.	Mammoth Cr.	Circle	Gold dredge	14
Bishoff, Frank & Theisen, Frank J., Wiseman	Suckik Cr., trib. Timber Cr., trib. John R.	Koyukuk	Shovel-in & prosp.	2
Bjornsgard, Durant, Campbell & Renfrew, Talkeetna	Mills Cr. & Lower Twin Cr.	Talkeetna	Dragline-washing plant	10
Bleeker, F. C., Fairbanks	First Chance Cr.	Fairbanks	Hydraulic-bulldozer	2
Blungell, J. B., Wiseman	Jim Pup Cr., trib. California Cr.	Koyukuk	Shovel-in & W. drift	1
Bock, Adolf, Tofty	Woodchopper Cr.	Hot Springs	Sniping	1
Bodis, George, Nome	Dick Cr.	C. Nome	Bulldozer-hydraulic	2
Boe, Homer & Sorenson, Pete, Hope	Palmer & Resurrection Crs.	Seward	Hydraulic	2
Bonanza Mining Co., Chisana	Bonanza Cr.	Chitina	Hydraulic	2

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Bott Bros., Wiseman	Eight Mile Cr., trib. Bettles R.	Koyukuk	Shovel-in & ground-sluice	2
Bowman, Harry, Iliamna	Portage Cr.	Iliamna	Bulldozer-hydraulic	1
Bradley, C. W., Talkeetna	Upper Cache Cr.	Talkeetna	Hydraulic	3
Brenner, Washburn & Schmidt, Fairbanks	No Grub Cr., trib. Salcha R.	Fairbanks	Shovel-in	3
Brink, John, Nyac	Bear Cr.	Bethel	Hydraulic	1
Brinker-Johnson Mining Co., 215 N. Carson St., Carson City, Nev.	Caribou Cr., Salcha R. Dist.	Fairbanks	Gold dredge	18
Bronniche, Fred, Siana	Porcupine Cr., trib. Siana Cr.	Chitina	Shovel-in	1
Brown & Tinkem, Nome	Ophir Cr., Council Dist.	C. Nome	Hydraulic	4
Burnett, S. & Hunter, M., Fairbanks	Crooked Cr., trib. Toklat R.	Fairbanks	Bulldozer-hydraulic	3
Buroker, Chas., Cantwell	Valdez Cr.	Talkeetna	Sniping	1
Busia, John, Fairbanks	Moose Cr., Kantishna Dist.	Fairbanks	Shovel-in	1
Bytell, Bros., Chicken	Wilson Cr., trib. N. Fk. Fortymile R.	Fairbanks	Shovel-in	2
Campbell, Frank Fairbanks	Buckeye Cr., trib. Banner Cr.	Fairbanks	Shovel-in	1
Campbell, Loren, Cantwell	Valdez Cr.	Talkeetna	Sniping	1
Cannon, Robert, Nome	Bruke & Lawson Crs., tribs. American R.	C. Nome	Bulldozer-hydraulic	2
Caribou Mines, 91 Columbia St., Seattle, Wash.	Caribou Cr., Kantishna Dist.	Fairbanks	Dragline-bulldozer-washing plant	14
Carlo, Wm. & May, John, Ruby	Ophir Cr., trib. Sulatna R.	Nulato	Bulldozer-hydraulic	3
Casa de Paga Gold Co., 1106 Hoge Bldg., Seattle, Wash.	Inmachuk R.	Fairhaven	2 gold dredges	30
Chappell, Oliver L., Wiseman	Quartz Pup, trib. Nolan Cr.	Koyukuk	Shovel-in & prospecting	1
Cheechako Mining Co., Fairbanks	Pedro Dome	Fairbanks	Gold lode	1
Chester, L. K., Eagle	Lower Seventymile R.	Eagle	Bulldozer	2
Chititu Mines, McCarthy	Rex & Chititu Crs.	McCarthy	Hydraulic & prospecting	5
Clay Products Co., Inc., Anchorage	S. Anchorage	Anchorage	Brick plant	3
Cleary Hill Mines, Inc., Fairbanks	Cleary Cr.	Fairbanks	Gold lode (maintenance)	2
Cleary Hill Mines, Inc.	Sullivan Cr. & Tofty Gulch	Hot Springs	Dragline-hydraulic-washing plant	9
Coffin, W. H., Deering	Kugruk R.	Fairhaven	Hydraulic	1
Crane, Fred & Assoc., Fairbanks	Brooks Mt.	C. Nome	Lead lode prospect	2

Cripple Creek Mining Co., Anchorage	Cripple Cr. near Folger	Innoko	Dragline-bulldozer-hydraulic	16
Dahl, Ben, Fairbanks	Bear Cr.	Koyuk	Preparatory work (placer)	2
Dahl, Ben, Fairbanks	Dime Cr.	Koyuk	Bulldozer-hydraulic	4
Dahl Creek Mining Co., 720-38th Ave., San Francisco, Calif.	Dahl Cr., Kougarak Dist.	C. Nome	Bulldozer-hydraulic	2
Dahl, Robert, Talkeetna	Nugget Cr.	Talkeetna	Sniping	1
Daily, Arthur F. & Assocs., 488 Fairbanks Ave., Oakland 10, Calif.	Seventymile R. below falls	Eagle	Placer prospect drilling	7
Dan Creek Mining Co., McCarthy	Dan Cr.	McCarthy	Hydraulic & prospecting	10
Danich, Joe, Anchorage	Jewel & Monarch mines, Girdwood	Anchorage	Gold lode & mill	3
Davis, Joe, Chisana	No. 2 Little Eldorado Cr.	Chitina	Shovel-in	1
Deadwood Mining Co., Circle Hot Springs	Deadwood Cr.	Circle	Dragline-bulldozer	6
Dean, Tom, Hot Springs	Miller Cr.	Hot Springs	Sniping	1
Decoursey Mtn. Mining Co., Flat	Crooked Cr.	Kuskokwim	Mercury lode	2
Degnan, Joe, Ophir	Little Cr.	Innoko	Dragline-bulldozer	5
Devault & Seitz, Eagle	Seventymile R. above falls	Eagle	Bulldozer	2
Diamond Coal Co., Box 890, Fairbanks	Norris-Parris permit, Healy R.	Nenana	Strip coal mine	14
Dinan, Frank, Rampart	Florida Cr.	Rampart	Placer drift	1
Dittman, David, Fairbanks	Dome Cr.	Fairbanks	Bulldozer-hydraulic	1
Dobson, H., Nome	American R.	C. Nome	Groundsluice	1
Douglas, J., Marshall	Upper Willow Cr.	Wade-Hampton	Shovel-in	1
Drexel, Ernest, Rampart	Florida Cr.	Rampart	Groundsluice	1
Edgcombe Exploration Co., Box 213, Sitka	Haley property, Silver Bay, Baranof I.	Sitka	Gold lode development	2
Englebritzen, Wm., Fairbanks	Pedro Cr.	Fairbanks	Sniping	1
Engstrom, Herbert, Nome	Basin Cr., trib. Nome R.	C. Nome	Bulldozer-hydraulic	3
Enoch, Emmor, Wiseman	Gold Cr., trib. Middle Fk. Koyukuk R.	Koyukuk	Shovel-in	1
Enstrom, Oscar & McDougal, J., Fairbanks	Colorado Cr., trib. American Cr.	Hot Springs	Bulldozer	3
Erickson, Helvor, Talkeetna	Cache Cr.	Talkeetna	Hydraulic	1
Ernst, Henry & Nickle, Ollie, Cantwell	Valdez Cr.	Talkeetna	Bulldozer-hydraulic	2
Evan Jones Coal Co., Box 619, Anchorage	Jonesville, Matanuska field	Palmer	Bituminous coal mine & washery	114

Evans, Silas, Nome	Benson Cr., trib. Iron Cr.	C. Nome	Bulldozer-hydraulic	2	40	REPORT OF COMMISSIONER OF MINES
Falls Creek Mining Co., Seward	States property, Falls Cr., Kenai Pen.	Seward	Gold lode & mill	10		
Fern Gold Mining Co., Anchorage	Fern Mine, Archangel Cr.	Wasilla	Gold lode & mill	3		
Foster & Assocs., Box 384, Nome	Fish R.	C. Nome	Lead lode prospect	2		
Foster & Assocs.	Sweepstakes Cr.	Koyuk	Placer prospect drilling	2		
Four-A Mining Co., Fairbanks	Flume Cr., trib. Pedro Cr.	Fairbanks	Bulldozer-hydraulic	4		
Francis, Earl & Coble, Joe, Fairbanks	Lower Eureka Cr.	Hot Springs	Bulldozer-hydraulic	3		
Franklin Mining Co., Fairbanks	Franklin Cr., trib. Fortymile R.	Fairbanks	Bulldozer	4		
Frasca, John & Co., Miller House	Independence Cr.	Circle	Bulldozer-hydraulic	4		
Frey Bros., Palmer	Eagle Cr., trib. E. Fk. Chistochina R.	Chitina	Hydraulic	2		
Ganes Creek Mining Co., Ophir	Ganes Cr.	Innoko	Gold dredge	7		
Glacier Creek Mining Co., Nome	Glacier Cr.	C. Nome	Bulldozer-hydraulic	2		
Gold Beach Dredging Co., Nome cr 351	Nome beach	C. Nome	Gold dredge	30		
California St., San Francisco						
Gold Cord Mining Co., Wasilla	Gold Cord Mine, Fishhook Cr.	Wasilla	Gold lode and mill	4		
Gold Dust Mining Co., Circle	Gold Dust Cr.	Circle	Bulldozer	3		
Gold Mint Mines, Hope	Nearhouse property, Palmer Cr.	Seward	Gold lode development	3		
Gold Placers, Inc., Fairbanks	Coal Cr., Circle Dist.	Circle	Gold dredge	30		
Goodnews Bay Mining Co., 423 White Bldg., Seattle 1, Wash.	Colorado Cr.	Innoko	Dragline-bulldozer-washing plant	16		
Goodnews Bay Mining Co.	Salmon R. & tribs., Goodnews Bay Dist.	Bethel	Dragline-bulldozer-washing plant	15		
Goodnews Bay Mining Co.	Salmon R.	Bethel	Platinum dredge	50		
Goodwick & Tronstad, Kobuk P. O.	Dahl Cr., trib Kobuk R.	Noatak-Kobuk	Hydraulic	2		
Grant Creek Mining Co., Grant Creek via Tanana	Grant Cr.	Ft. Gibbon	Dragline-bulldozer hydraulic	6		
Grant Mining Co., Nome	Coffee Cr., Kougarek Dist.	C. Nome	Bulldozer-hydraulic	6		
Grubstake Mining Co., Box 22, E. Anchorage	Grubstake Cr.	Chitina	Hydraulic	2		
Haven, Amund, Eagle	Fox Cr., trib. Seventymile R.	Eagle	Hydraulic	1		
Hamberg & Giliska, Talkeetna	Pass Cr.	Talkeetna	Hydraulic	2		
Hansen, B. & Hendrickson, P., Eagle	Alder Cr., trib. Seventymile R.	Eagle	Bulldozer	2		
Hard, Uotila & Hanson, Folger	Bear Cr., Cripple area	Innoko	Dragline-bulldozer	3		
Harrison Creek Mining Co., Miller House	Harrison Cr.	Circle	Hydraulic	3		

Hassell, Harold, Fairbanks	Ready Bullion Cr., trib. Ester Cr.	Fairbanks	Dragline-bulldozer-hydraulic	2		
Hatten & Turner, Flat	Willow Cr.	Otter	Dragline-hydraulic-bulldozer	6		
Havenstrite Mining Co., 811 W. 7th St., Los Angeles 14, Calif.	Mud Cr.	Fairhaven	Placer development	18		
Hayes & Whitely, Douglas	Thane beach	Juneau	Bulldozing tailings	3		
Healy River Coal Corp., Fairbanks	Suntrana Mine, Healy R.	Nenana	Subbituminous coal mine & screening plant	80		
Hedla Bros., Suntrana	Ketchum Cr.	Circle	Dragline-bulldozer	3		
Helcolicon Mines, Inc., Kiana	Salmon R., trib. Kobuk R.	Noatak-Kobuk	Placer prospect drilling	6		
Henny, Jack, Ferry	Marguerite Cr.	Nenana	Hydraulic	1		
H. & H. Mining Co., Nome	Million Cr., trib. Windy Cr., trib. American R.	C. Nome	Bulldozer-hydraulic	2		
Hi Yu Mining Co., Fairbanks	Hi Yu Mine, Fairbanks Cr.	Fairbanks	Gold lode (maintenance)	1		
Holmer Coal Corp., Homer	McNally property, Cook Inlet field	Seldovia	Coal mine development	3		
Hosler, D. G. & Elmer, Anchorage	Moose Cr., trib. Kantishna R.	Fairbanks	Bulldozer	2		
Houston, Alexander, Nome	Dahl Cr., Kougarek Dist.	C. Nome	Bulldozer-hydraulic	3		
Hunter Creek Mining Co., Fairbanks	Upper Hunter Cr.	Rampart	Hydraulic stripping	3		
Hunter, Jerry, Platinum	Beach W. of Red Mt., Goodnews Bay Dist.	Bethel	Groundsluice	1		
Iditarod Operating Co., Fairbanks	Golden Cr., trib. Illinois Cr.	Ft. Gibbon	Bulldozer	7		
Jackson, Nels, Fairbanks	Totatlanika R.	Nenana	Bulldozer-hydraulic	2		
Janeau, E., Fairbanks	Fortymile R. opp. Smith Cr.	Fairbanks	Hydraulic with pump	1		
Jenkins, Fred F. & Assocs., Eagle	Near Eagle	Eagle	Nickel lode prospect	2		
Johnson, H., Teller	Gold Run Cr.	C. Nome	Placer drift & shovel-in	1		
Johnson, Iver & Co., Long via Ruby	Trail Cr.	Nulato	Dragline-bulldozer pump	3		
Johnson & Johnson, Hot Springs	Bet. Glen Gulch & Rhode I. Crs.	Hot Springs	Bulldozer-hydraulic	2		
Johnson, Selma, Nome	Dreamy Gulch, trib. Kougarek R.	C. Nome	Bulldozer-hydraulic	3		
Jones, Chas. D., Nome	Osborne Cr.	C. Nome	Bulldozer-hydraulic	3		
Jones, R. H., Fairbanks	Smith Cr., trib. Nolan Cr.	Koyukuk	Shovel-in & drift	2	41	REPORT OF COMMISSIONER OF MINES

Jurich, John & Carr, Tom, Livengood	Lillian Cr.	Tolovana	Hydraulic	2	REPORT OF COMMISSIONER OF MINES
Karstens, Basham & Gustafson, Fairbanks	Bottom Dollar Cr.	Circle	Bulldozer	3	
Kasaan Gold Co., Hollis	Harris Cr. near Hollis	Ketchikan	Gold lode & mill	2	
Kaye Bros., Fairbanks	Sanford Mine, Ester Dome	Fairbanks	Gold lode development	2	
Kelly, Franklin, Miller House	Miller Cr.	Circle	Bulldozer-hydraulic	3	
Kelly-Willow Mining Co., Anchorage	Brooklyn Mine, upper Willow Cr.	Wasilla	Gold lode development	3	
Keys, Ed., Fairbanks	No. 3 Pup, trib. Grubstake Cr.	Nenana	Shovel-in	1	
Klcss. H. & Davis, J., Entrance I. via Juneau	Sunset Cove, Windham Bay	Juneau	Gold-antimony lode development	2	
Knob Creek Coal Mine, Palmer	Knob Cr., Eska area, Matanuska field	Palmer	Coal mine development	2	
Kougarok Dredging Syndicate, Box 393, Anchorage	Kougarok R.	C. Nome	Gold dredge	30	
Kougarok Freight & Mining Co., Nome	Buster Cr., trib. Nome R.	C. Nome	Bulldozer-hydraulic	3	
Lammers Exploration Co., 826 E. 26th St., Spokane 10, Wash.	Klery Cr. trib. Squirrel R	Noatak-Kobuk	Gold dredge	20	
Lane, Jacob, Anchorage	High Grade Claim, Fishhook Cr.	Wasilla	Gold lode development	1	
Last Chance Mine, Seward	Town of Seward	Seward	Gold lode development	2	
Lavendero, Manuel, Kiana	Klery Cr.	Noatak-Kobuk	Hydraulic	1	
Lawler, Kinney & Fulton, Fairbanks	Big Boulder Cr.	Hot Springs	Bulldozer-hydraulic	3	
Leaoff, Harry, Flat	Malamute Pup, trib. Otter Cr.	Otter	Hydraulic	2	
Lee Bros. Dredging Co., Nome	Solomon R.	C. Nome	2 gold dredges	20	
Leisman, Hans, Bettles	Rye Cr., trib. Wild R.	Koyukuk	Shovel-in	1	
Leonard, H. B. & Krise Bros., Wiseman	Gold Cr., trib. Middle Fk., Koyukuk R.	Koyukuk	Bulldozer	5	
Lindfors, Hugo & Bale, Nome	Rocky Mtn. Cr.	C. Nome	Bulldozer-hydraulic	2	
Lindsey, Geo., Moose Pass	Summit Cr.	Seward	Gold lode & mill	3	
Linsrom, Tony, Fairbanks	Wilbur Cr. trib. Tolovana R.	Tolovana	Bulldozer-hydraulic	5	
Little Minook Mining Co., Fairbanks	Little Minook Cr.	Rampart	Dragline-bulldozer-pump	7	
Livengood Placers, Inc., 1225 Crocker First National Bank Bldg., San Francisco, Calif.	Livengood Cr.	Tolovana	Gold dredge (maintenance)	20	
Lloyd, Lewis, Kobuk P. O.	Dahl Cr.	Noatak-Kobuk	Hydraulic	1	
Lody, Mike, Fairbanks	California Cr.	Nenana	Groundsluice	1	
Lonesme Gold Mine, Wasilla	Gold Mint property, Little Susitna R.	Wasilla	Gold lode development	3	

Long Creek Mining Co., Ruby	Bear Pup, trib. Long Cr.	Nulato	Dragline-bulldozer-hydraulic	2	REPORT OF COMMISSIONER OF MINES
Lost Chicken Mining Co., Chicken	Lest Chicken Cr., Fortymile Dist.	Fairbanks	Bulldozer	2	
Lysell, Geo., Chicken	Myers Fork, Fortymile Dist.	Fairbanks	Shovel-in	1	
McFarland, C. & Hubbard, W., Ophir	Upper Little Cr.	Innoko	Bulldozer-hydraulic	4	
McGinnis Creek Mining Co., Juneau	McGinnis Cr.	Juneau	Hydraulic	3	
McMahan, C. J., Nelchina	Albert Cr., Nelchina Dist.	Chitina	Bulldozer-hydraulic	4	
Madden, Lyman, Nome	Garfield Cr.	C. Nome	Bulldozer-Hydraulic	4	
Mandich, Nick, Livengood	Lillian Cr.	Tolovana	Hydraulic	1	
Manske, E. D., Fairbanks	Ingle Cr., Fortymile Dist.	Fairbanks	Bulldozer stripping	1	
Martin, Gibson, Fairbanks	Pedro Cr.	Fairbanks	Bulldozer-hydraulic	5	
Martin, Glen, Circle	Portage Cr.	Circle	Shovel-in	1	
Martensen, Olaf, Teller	Gold Run Cr.	C. Nome	Shovel-in	1	
Marvel Creek Mining Co., Bethel	Marvel Cr.	Kuskokwim	Dragline-bulldozer-hydraulic	8	
Matheson & Savage, Ophir	Spruce Cr.	Innoko	Dragline-bulldozer-hydraulic	3	
Maurer, Ernest, Fairbanks	First Chance Cr., trib. Ester Cr.	Fairbanks	Bulldozer-hydraulic	2	
Meise & Stanton, Talkeetna	Ruby Gulch & Cache Cr.	Talkeetna	Bulldozer-hydraulic	3	
Meldrum, Wm., Chicken	Chicken Cr., Fortymile Dist.	Fairbanks	Bulldozer	1	
Midnight Mining Co., Nome	Lower Midnight Cr.	C. Nome	Bulldozer-hydraulic	3	
Midnight Mining Co., Ruby	Midnight Cr.	Nulato	Bulldozer-hydraulic	4	
Midnight Sun Gold Mining Co., Fairbanks	Wiseman & Smith Crs.	Koyukuk	Bulldozer	6	
Miller, Frank & Sons, Wiseman	Sheep Cr., trib. Middle Fk. Koyukuk R.	Koyukuk	Bulldozer	4	
Miscovich, P., & Sons, Flat	Otter Cr.	Otter	Dragline-bulldozer-hydraulic	7	
Miscovich & Sons, Fairbanks	Flat & Timber Crs.	Nulato	Dragline-bulldozer-pump	8	
Monica, Umberto, Nome	Darling Cr.	C. Nome	Bulldozer-hydraulic	2	
Montana Zinc & Lead Co., Ketchikan	Mahoney Mine, George Inlet	Ketchikan	Lead-zinc lode with mill	7	
Morelock Mining Co., Fairbanks	Rosie Cr., trib. Morelock Cr.	Ft. Gibbon	Bulldozer	3	
Murphy, John, Ferry	Upper Eva Cr.	Nenana	Groundsluice	1	
Myrtle Creek Mining Co., Fairbanks	Myrtle Cr.	Koyukuk	Dragline-bulldozer	14	
Nashenweng, Louis, Nome	Lower Dahl Cr., Kougarok Dist.	C. Nome	Bulldozer-hydraulic	4	
Nesland, E., Wiseman	Granite Cr., trib. Porcupine Cr.	Koyukuk	Bulldozer	2	

New Hope-Hirshey, Seward	Hirshey & Hatcher mines, Palmer Cr.	Seward	Gold lode development	3
New York-Alaska Gold Dredging Corp.,	Bear Cr., trib. Tuluksak R.	Bethel	2 gold dredges & dragline	60
Nyac or 41 Broad St., New York				
Nicholson & Baldwin, Nome	Sweepstakes Cr., trib. Peace R.	Koyuk	Bulldozer-hydraulic	4
Nixon Fork Mining Co., Anchorage	Nixon Fk. Kuskokwim R.	Mt. McKinley	Gold lode & mill	6
North American Gold Dredging Co., Flat	Otter Cr.	Otter	Gold dredge	16
Northern States Mining & Construction Co., Inc., Deering	Black Diamond Bench, Inmachuk R.	Fairhaven	Bulldozer-hydraulic	6
North Fork Dredging Co., Nome	N. Fk. Kougarok R.	C. Nome	Gold dredge	6
Nugget Mining Co., Talkeetna	Cache Cr. at mouth Thunder Cr.	Talkeetna	Bulldozers	5
Nutzotin Mining Co., Anchorage	Bonanza & Eldorado Crs.	Chitina	Placer stripping	6
Olsen, Henry & Harold, Nenana	Totatlanika R.	Nenana	Bulldozer-hydraulic	3
Ost, L. E., Council	Crooked Cr., trib. Ophir Cr.	C. Nome	Bulldozer-hydraulic	2
Parker, Raymond & Hopkins, Fairbanks	Ester & Fairbanks Crs.	Fairbanks	Bulldozer	4
Parker & Heflinger, Fairbanks	N. R. Hudson property, Olive Cr.	Tolovana	Dragline-bulldozer	7
Pennington & Tyler, Palmer	Daisy Cr., trib. Tyone R.	Talkeetna	Moving in equipment	3
Permanente Cement Co., 3801 E. Marginal Way, Seattle, Wash.	View Cove, Dall I.	Ketchikan	Limestone quarry	21
Peterson, Hans, Nome	Come Cr., trib. Iron Cr.	C. Nome	Bulldozer-hydraulic	2
Pioneer Mining Co., Fairbanks	Pioneer Cr.	Hot Springs	Bulldozer-hydraulic	3
Pitcoff, Geo., Talkeetna	Upper Nugget Cr.	Talkeetna	Sniping	1
Porter, Wallace, Haycock	Bear Cr., trib. Buckland R.	Fairhaven	Bulldozer-hydraulic	6
Price, Stanton, Windham	Spruce Cr., Windham Bay	Juneau	Bulldozer	3
Primer, Paul, Shungnak	Lynx Cr.	Noatak-Kobuk	Hydraulic	1
Pringle, A. W., Hot Springs	Rhode Island Cr.	Hot Springs	Bulldozer-hydraulic	3
Purdy, Fred & Arthur, Chicken	Myers Fk., trib. Chicken Cr., Fortymile Dist.	Fairbanks	Bulldozer	2
Purkeypile, I. W., Poorman	Boulder Cr., Tonzona Dist.	Mt. McKinley	Silver-lead prospect	2
Quizley, E. W., Solomon via Nome	Solomon R.	C. Nome	Bulldozer-hydraulic	8
Quillan, Joe, Kiana	Klery Cr., trib. Squirrel R.	Noatak-Kobuk	Hydraulic	1
Radak, John, Livengood	Ruth Cr.	Tolovana	Hydraulic	1
Radovan, Martin, McCarthy	Glacier Cr.	McCarthy	Copper lode development	1
Rainbow Mining Co., Nome	Buzzard Cr. & Black Gulch	C. Nome	Bulldozer-hydraulic	4
Reinosky, Frank J., Rampart	Hunter Cr.	Rampart	Groundsluice	1
Rice, C. F. Co., Teller	Sunset Cr.	C. Nome	Bulldozer-hydraulic	2

Roberts, C. O. Co., Nome	Big Hurrah Mine, Hurrah Cr., trib. Solomon R.	C. Nome	Gold lode & mill	3
Rolando Bros., Nome	American Cr.	C. Nome	Bulldozer-hydraulic	2
Rosander, T. & Reed, L., Ophir	Yankee Cr.	Innoko	Dragline-bulldozer-hydraulic	15
Rylander & Hagberg, Fairbanks	Dime Cr.	Koyuk	Placer stripping	1
Santiago-Alaska Mines, Inc., 423 Hamilton St., Vancouver, B. C.	Valparaiso-Amazon Mine, Dolomi, Prince of Wales I.	Ketchikan	Gold lode & mill	5
Savage, Patrick, Flat	Flat Cr.	Otter	Dragline-bulldozer-hydraulic	6
Sawtooth Mining Co., Fairbanks	Sawtooth Mtns.	Rampart	Antimony lode	2
Scherard, Jas. L. & Son, Nome	Sydney Cr., trib. Cripple R.	C. Nome	Placer prospect drilling	3
Scott, J. H. Co., 465 California St., San Francisco 4, Calif.	Riverside Mine, Hyder Dist.	Hyder	Lead-silver-gold-tungsten lode & mill	33
Scott, Tolbert, Nome	Iron Cr.	C. Nome	Gold dredge	7
Chimrock, Mike, Tofty	Shirley Bar	Hot Springs	Bulldozer-truck	1
Sinclair, Basil & Assocs., Anchorage	Kansas Cr., Mt. Hayes Dist.	Fairbanks	Antimony lode development	3
Slocum Arm Mining Co., Cobol via Juneau	Cox-Bolyan Mine, Slocum Arm, Chichagof I.	Sitka	Gold lode development	4
Smith, F. J., Wiseman	Spring Cr.	Koyukuk	Shovel-in	1
Snowbird Mining Co., Inc., Anchorage	Reed Cr., trib. Little Susitna R.	Wasilla	Gold lode development	9
Sourdough Dredging Co., Council	Ophir Cr.	C. Nome	Gold dredge	9
Sourdough Mining Co., Fairbanks	Sourdough Cr.	Fairbanks	Bulldozer-hydraulic	3
South Fork Mining Co., Fairbanks	South Fk. Koyukuk R.	Koyukuk	Dragline-bulldozer-hydraulic	11
Sparks, Howard & Assocs., Fairbanks	Willow Cr., trib. Cleary Cr.	Fairbanks	Antimony lode development	3
Stampede Mines, Fairbanks	Stampede Cr., Kantishna Dist.	Fairbanks	Antimony lode & mill	3
Standifer, G. M. & Assocs., 1155 California St., San Francisco, Calif.	Ganes Cr.	Innoko	Placer prospect drilling	6
Stanich & Stanich, Wiseman	Porcupine Cr.	Koyukuk	Hydraulic & W. drift	2
Treen, Harry, Flat	Julian Cr., trib. Crooked Cr.	Kuskokwim	Bulldozer-hydraulic	3
Stoil, W. M., 1616 Hoge Bldg., Seattle 4, Wash.	Sidney Ridge, Willow Cr. Dist.	Wasilla	Gold lode development	3

Stone, B. A., Medfra	Eagle Cr., Nixon Fk. Dist.	Mt. McKinley	Gold lode development	2
Strand, John, Medfra	Ruby Cr., Nixon Fk. Dist.	Mt. McKinley	Shovel-in	1
Strandberg & Sons, Anchorage	Utopia Cr, trib. Indian R.	Ft. Gibbon	Dragline-bulldozer-	
			washing plant	18
Strom Mining Co., Fairbanks	Rose Cr., trib. Gilmore Cr.	Fairbanks	Dragline-bulldozer-	
			hydraulic	3
Stuver, Jules, Flat	Head of Happy Cr.	Otter	Hydraulic	1
Sunset Mining Co., Anchorage	Lower Cache Cr.	Talkeetna	Bulldozer-hydraulic	4
Swanberg & Sons, Council	Ophir Cr.	C. Nome	Bulldozer-hydraulic	5
Swanson Bros. & Saarela, Leo, Rampart	Hunter Cr.	Rampart	Bulldozer-hydraulic	3
Swanson, Carl, Haycock	Dime Cr.	Koyuk	Placer drift	1
Tanner & Taylor, Nome	Ophir Cr.	C. Nome	Placer drilling	2
Taraski, A. J., Talkeetna	Cache Cr.	Talkeetna	Hydraulic	1
Terel, F., Wiseman	Garnet Cr., trib. Bettles R.	Koyukuk	Shovel-in	1
Thompson, Joe, Iliamna	Kijik R., trib. Lake Clark.	Iliamna	Lead-silver prospect	1
Thunder Mines, Inc., Anchorage	Thunder Cr.	Talkeetna	Hydraulic & pros-	
			pecting	3
Trinity Mining Co., Nome	Trinity Cr.	C. Nome	Bulldozer	3
Troseth, Johnson & Brevick, Fairbanks	LL. Upper Cleary Cr.	Fairbanks	Shovel-in & pros-	
			pecting	3
Twedt, Ole, Chichagof	Klag Bay, Chichagof I.	Sitka	Gold lode development	1
Tweet, N. B. & Sons, Teller	Humboldt Cr.	C. Nome	Bulldozer-hydraulic	4
Two and a Half Mining Co., Fairbanks	Hutchinson Cr., Fortymile Dist.	Fairbanks	Bulldozer	2
Ungalik Syndicate, 100 E. 42nd St., Seattle, Wash.	Ungalik R.	St. Michael	Gold dredge	20
United Mining & Development Co., Seward	Gilpatrick Mine, Slate Cr.	Seward	Gold lode development	1
U. S. S. R. & M. Co., 75 Federal St., Boston, Mass	Fairbanks Dist.	Fairbanks	6 gold dredges	440
U. S. S., R. & M. Co.	Seventymile R. above falls	Eagle	Placer prospect	
			drilling	5
U. S. S., R. & M. Co.	Vicinity of Nome	C. Nome	1 gold dredge & maintenance	132
Uotila & Hard, Ophir	Ophir Cr.	Innoko	Dragline-hydraulic-	
			bulldozer	7
Uotila & Ogriz, Flat	Slate Cr.	Otter	Dragline	6
Urban, Adolph, Central	Crooked Cr.	Circle	Sniping	1

Usibelli Coal Mine, Suntrana	U. S. Army Permit, Healy R. field	Nenana	Strip coal mine	33
Verdin, Ed., Fox	Near head of Fox Cr.	Fairbanks	Hydraulic	1
Vibe, N. J., Ophir	Little Cr.	Innoko	Dragline-bulldozer-	
			hydraulic	6
Vibe, N. J. & Girtler, Ophir	Anvil Cr.	Innoko	Dragline-bulldozer	7
Vogan, Barney, Teller	Upper Gold Run Cr.	C. Nome	Bulldozer-hydraulic	2
Wade Creek Dredging Co., Fairbanks	Wade Cr., trib. Walker Fk., Fortymile Dist.	Fairbanks	Bulldozer	6
Wade-Hampton Mining Co., Fortuna Ledge	Disappointment Cr.	Wade-Hampton	Bulldozer-hydraulic	5
Wagners, Robert & Assocs., Fairbanks	Gold King Cr.	Nenana	Bulldozer-hydraulic	2
Waldhelm, Geo., Nome	Quartz Cr., trib. Dahl Cr.	C. Nome	Bulldozer-hydraulic	4
Wallin, Geo., Deering	Kugruk R.	Fairhaven	Coal mine	1
Warwick, A. & M., Fairbanks	Gertrude Cr.	Tolovana	Bulldozer-hydraulic	3
Weatherall, Geo., Talkeetna	Nugget Cr.	Talkeetna	Hydraulic	2
Webfoot Prospect, Anchorage	Archangel Cr.	Wasilla	Gold lode development	9
Weinard, Fred, Candle	Jump Cr., trib. Candle Cr.	Fairhaven	Bulldozer-hydraulic	2
Wells, Cecil, Fairbanks	Amy Cr.	Tolovana	Dragline-bulldozer-	
			washing plant	9
Whalen, E. M., Medfra	Hidden Cr., Nixon Fk.	Mt. McKinley	Shovel-in	1
White, Paul & Ted, Gulkana	Eagle Cr., Chistochina Dist.	Chitina	Hydraulic	3
Whitehead, Fred, Chicken	Upper Chicken Cr., Fortymile Dist.	Fairbanks	Bulldozer	2
Whitmore, R. H. & Noonan, J. E., Nome	Mascot Cr., trib. Kougarek R.	C. Nome	Dragline-bulldozer	4
Williams, Russel & Jackovich, Milo, Fairbanks	Gilmore Cr.	Fairbanks	Dragline-bulldozer-	
			hydraulic	6
Willow Creek Mining Co., Marshall	Willow Cr.	Wade-Hampton	Dragline-bulldozer-	
			washing plant	10
Wilson & Horner, Bethel	Canyon Cr.	Bethel	Bulldozer-hydraulic	5
Winder, J. S., Haycock	Sweepstakes Cr.	Koyuk	Hydraulic	1
Wise, Malcolm & Arthur, Box 861, Fairbanks	Thistle Cr.	Nenana	Bulldozer	2
Wiurm Bros., Nome	Coffee Cr.	C. Nome	Bulldozer-hydraulic	2
Wolf Creek Mining Co., Fairbanks	Wolf Cr., trib. Cleary Cr.	Fairbanks	Dragline-bulldozer-	
			washing plant	9
Worm, Otto, Nome	Windy Cr., trib. Kougarek R.	C. Nome	Bulldozer-hydraulic	3
Yukon Mining Co., Anchorage	Trib. of Kako Cr.	Wade-Hampton	Dragline-bulldozer-	
			washing plant	8

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

*Report of the Mine Inspector for the Territory of Alaska to the Secretary of the Interior, fiscal year ended June 30, 1912.

*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.

*Annual Report of the Territorial Mine Inspector to the Governor of Alaska, 1921.

*Annual Report of the Mine Inspector to the Governor of Alaska, 1922.

*Annual Report of the Mine Inspector to the Governor of Alaska, 1923.

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

*Report of the Territorial Mine Inspector, calendar years 1925-1926.

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.

Report of the Commissioner of Mines to the Governor, biennium ending December 31, 1938.

*Report of the Commissioner of Mines to the Governor, biennium ending December 31, 1940.

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

Joesting, Henry R., Supplement to Pamphlet No. 1—Strategic mineral occurrences in interior Alaska: Pamphlet No. 2, March 1943.

Yukon Placer Mining Co., Box 1108,
Fairbanks
Yukon Placer Mining Co.
Yukon Placer Mining Co.
Zenander, Richard & Assocs., Fairbanks
Zeiser, Clarence, Poorman
Zilkie, Charles, Ferry
Zimmerman, A. A., Miller House

Canyon Cr., Fortymile Dist.
Walker Fk., Fortymile Dist.
Fourth of July Cr.
Nome Cr.
Spruce Cr.
Windy Cr.
Independence Cr.

Fairbanks	Gold dredge	5
Fairbanks	Bulldozers	12
Eagle	Bulldozer	5
Fairbanks	Bulldozer-hydraulic	3
Nulato	Bulldozer stripping	2
Nenana	Groundsluice	1
Circle	Hydraulic	2

Anderson Eskil, Mineral occurrences in Northwestern Alaska; Pamphlet No. 5, May 1944.

Stewart, R. L., Prospecting in Alaska (26-page pamphlet), December 1944.

Report of the Commissioner of Mines to the Governor, two biennia ended December 31, 1944.

Glover A. E., Industrials minerals as a field for prospecting in Alaska, including a glossary of elements and minerals (82-page booklet), March 1945 (Revised to May 1946).

Anderson, Eskil, Asbestos and jade occurrences in the Kobuk River region, Alaska; Pamphlet No. 3 May 1945.

Roehm, J. C., Some high calcium limestone deposits in Southeastern Alaska; Pamphlet No. 6, March 1946.

Report of the Commissioner of Mines, biennium ended December 31, 1946.

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