

REPORT
of the
TERRITORIAL MINE
INSPECTOR



**PROPERTY OF
LIBRARY
STATE OF ALASKA
DIVISION OF
GEOLOGICAL SURVEY**

Calendar Years
1925--1926

Letter of Transmittal

Juneau, Alaska, Feb. 19, 1927.

TO THE SENATE AND HOUSE
OF REPRESENTATIVES:—

There is herewith transmitted, the report of the Territorial Mine Inspector for the calendar years 1925-1926, as directed by Chapter 33, Session Laws of 1925.

GEO. A. PARKS,
Governor.

Report of Territorial Mine Inspector

By its act approved April 27, 1925, (Chapter 33 Session Laws 1925) the Alaska Legislature again suspended for the biennium ending March 31, 1927, the law (Chapter 44 Session Laws 1921) providing for the appointment of a Mine Inspector, and authorized the continuance, for that period, of the cooperative agreement then in effect between the Territory and the Department of the Interior (Bureau of Mines) covering mining investigations and mine inspection in the Territory to be carried on under the direction of the Supervising Mining Engineer of the U. S. Bureau of Mines.

The sum of \$20,000 was appropriated to defray the Territory's share of the expenses involved.

Immediately following the passing of the Act of April 27, 1925, the Supervising Engineer forwarded to the Interior Department, Bureau of Mines, at Washington for signature the draft of a cooperative agreement signed by the Governor and similar to that which had been in force during the previous biennium. On May 26, 1925, the Supervising Engineer was notified by the Director of the Bureau of Mines that the legality of the cooperative agreement had been questioned by the Solicitor for the Interior Department, and that it would not be possible for the Department to enter into such an agreement until specific authorization by Congress had been obtained. The Director also indicated that until such authorization was provided use of the territorial fund for mining investigations could not be approved.

At the request of the Director of the Bureau of Mines the Solicitor of the Interior Department had previously prepared a bill for an act authorizing cooperative agreements between the federal departments and the Territory, and allowing federal officials to administer territorial laws under certain limiting conditions and when requested by the Governor and legislature so to do.

This bill was submitted to Congress by the Secretary of the Interior at the short session in December, 1924, but owing to the crowded condition of the congressional calendar it failed to pass. So far as is known no further effort has been made to have similar legislation enacted.

In spite of the situation created by the conditions above outlined the work of this office was continued during the year 1925 as nearly as possible along the lines contemplated by the cooperative agreement. The extent of the work that could be done was limited, however, by the fact that practically all the expenses had to be met from federal funds, which, of course, were insufficient to carry out the full program planned. The work of mine inspection was carried on as usual throughout the year and quite extensive field investigations of mining development, methods, and costs were made in many sections of the Territory, in connection with which there was continued the important work of rendering assistance in the field to prospectors and small development companies.

The personnel engaged in the work of mining investigations consisted of the following: 1—supervising mining engineer; 1—placer mining engineer; 1 to 3—lode mining engineers. The placer mining engineer and two of the lode mining engineers were secured on a part time basis. They devoted to field examinations from one to four months each year and about an equal period to the preparation of reports thereon. The third lode mining engineer was retained throughout each year and, in addition to mining investigations and service work to prospectors, he was engaged in mine inspection work, particularly in operating lode mines.

Much of the time of the supervising engineer was devoted to administrative duties and the preparation of reports, though as much time as possible was spent in making field examinations.

The most serious difficulty arising from the inability to use the territorial fund resulted from the total lack of clerical assistance in the Juneau office from May, 1925, to August, 1926. Data gathered in the field during 1924 and 1925 remain unpublished, as funds for printing the annual report to the Governor covering mining development could not be used and clerical assistance in preparing the material for publication could not be procured.

The situation was further complicated when a reorganization of the federal departments took place at Washington effective July 1, 1925, whereby the Bureau of Mines was transferred from the Interior Department to the Commerce Department. In connection with that transfer an exception was made of Alaska. Only a portion of the activities of the Bureau of Mines in the Territory were transferred to the Commerce Department. The remainder, including most of the activities concerned in the cooperative agreement with the Territory, were retained in the Interior Department and placed in the Alaskan Branch of the Geological Survey under the control of the Chief Alaskan Geologist. The direction in the Territory of all the activities affected continued to be exercised by the Supervising Mining Engineer. Owing to the difference in policy governing work done under the Geological Survey further uncertainty arose as to the conduct of the cooperative work in Alaska. Through the efforts of the Governor while at Washington early in 1926, however, supplemented by the results of a trip to Washington by the Supervising Mining Engineer in May, 1926, an arrangement was made whereby authorization was obtained to continue the cooperative work and to employ the funds therefor provided by the Territory without a formal agreement being entered into. As a consequence of this arrangement the field work of this office was continued during the season of 1926 on a quite satisfactory basis and with good results.

Alaska is now divided into 49 recording precincts. During the past biennium one or another of the field men working under the direction of the Supervising Mining Engineer in connection with the work contemplated by the cooperative agreement with the Territory has visited and made investigations of the mining development in 38 of these 49 precincts. The only precincts not visited were the following: Koyuk, Noatak-Kobuk, Port Clarence, Aleutian Islands, Bristol Bay, Iliamna, Kodiak, Kvichak, White River, Chandalar, and Koyukuk.

During the past four years nearly every active placer mining district in the Territory has been examined and a study made of mining conditions therein, mining methods and costs, labor conditions, and such other matters as have a bearing on the progress of the industry. The results of the studies of mining methods and costs are embodied in a bulletin that is being issued by the U. S. Bureau of Mines that is entitled "Placer Mining Methods and Costs in Alaska," by Norman L. Wimmeler. This bulletin is now in the hands of the public printer at Washington and it is hoped will be available for distribution during the coming session of the legislature.

In addition to this bulletin comprehensive annual reports have been prepared and filed covering the details of placer mining in the areas visited during each year.

Wherever possible and desired assistance has been rendered placer operators in the field. Through his familiarity with operating methods in all districts the placer mining engineer has been able to render valuable service to placer miners by suggesting improved practices. Aid has also been given in helping to secure many needed improvements in transportation facilities.

Examinations of lode prospects and operating properties were conducted during the biennium in about 20 precincts embracing about 50 different districts, distributed from the Hyder district on the south and east to the Fairbanks and Nome districts on the north and west and the Lower Kuskukwim-Goodnews Bay region on the south and west. During the biennium approximately 150 lode prospects were examined, in connection with which about 400 representative samples were taken and forwarded to Fairbanks for assay.

Where conditions seemed to warrant and time permitted surveys were made of prospects, pocket transits and aneroid barometers being employed for the purpose. From these surveys sketches were prepared showing the types of bedrock and the nature and extent of mineralization observed together with their relationship to surface and underground workings, both as regards horizontal position and elevation. On the sketches were also noted such features as faults, contacts, etc., and the positions and widths of samples taken together with assay results. Blue print copies of these sketches are available, free to the owners of the prospects mapped. There are now on file approximately 125 such sketches, copies of which have been furnished to the prospectors concerned.

In the case of lode prospects particularly has it been possible to render valuable assistance in the field. The instances where it was found that prospectors and small development companies were in need of such help as could be given by the visiting engineers closely approximates 100 per cent of the properties examined. In the case of nearly every property visited the prospector was found to be experiencing some sort of difficulty in connection with his development work. The problems encountered are of great variety, but a large percentage arise from the difficulty of tracing faulted or otherwise disturbed veins; uncertainty as to the true dip and strike of mineralized zones or the true relationship existing between

disconnected and scattered surface outcrops; and an imperfect understanding of the commercial value of the ores under development. This last named difficulty is due frequently to lack of assays, or to improper and misleading methods of sampling, or lack of knowledge as to market conditions and a failure to recognize the metallurgical difficulties involved in the concentration and treatment of the ores. Through consultation with the prospectors and through the medium of the surveys made and sketches prepared many such problems have been solved during the biennium. A concrete example may be cited in the case of one of the most promising properties visited. In this instance the prospector, who has very limited means, had alone driven a crosscut tunnel nearly 400 feet in length designed to intercept his vein at a depth of 220 feet below its outcrop.

Because of not being able to truly interpret the dip of the vein, however, his tunnel was driven almost parallel with and entirely underneath the vein, and the last work done was in a crosscut pointed directly away from the vein. A brief survey by the visiting engineer served to reveal the mistake made and enabled him to advise the prospector as to the best way to correct it.

During each year of the biennium between 25 and 30 operating lode mines and quarries have been inspected with special reference to safety conditions. Reports concerning accidents and labor conditions in connection with the mining industry have been received and tabulated.

Wherever possible the causes of serious accidents have been investigated. Where unsafe practices have been observed and unsafe or unhealthy conditions found an endeavor has been made to bring about a correction of them. It is believed tangible beneficial results have been achieved in this regard during the biennium, especially with the larger operating companies, in whose mines a high percentage of the accidents have occurred in the past. A fine spirit of cooperation on the part of operators has been experienced in most cases and well planned programs for accident prevention have been adopted. A concrete example of results realized is the recent appointment by the Alaska Juneau Mining Company, on recommendation of the mine inspector, of an experienced safety engineer who is devoting full time to the daily inspection of the working places in the mine and to the correction of unsafe practices and conditions.

In August, 1926, an experienced clerk was secured for the Juneau office, by transfer from the U. S. Bureau of Mines. His time has been largely devoted to establishing a filing system designed to meet the needs of the office. The system adopted is that in use by the U. S. Bureau of Mines and will be of great value in properly caring for the valuable records that have been gathered.

The equipment of the Juneau and Anchorage offices has been greatly improved by the addition of many filing cases, bookcases, map cases, etc., supplied mostly by the Bureau of Mines and Geological Survey.

Substantial additions have also been made to the mining libraries of each of these offices and collections of representative specimens of ores, minerals and mineral bearing rocks have been started. These are avail-

able to prospectors and others interested, and when fully developed should be of great value for reference purposes.

A great many individuals have visited the offices at Juneau, Anchorage, and Fairbanks in connection with matters relating to mining developments in the Territory and a large amount of correspondence has been conducted with persons in the Territory and in the States on matters connected with mining operations.

Many reports dealing with mineral resources and mining development have been prepared for other official agencies, especially the Governor's office and the offices of the U. S. Bureau of Public Roads, the Forestry Service, the Alaska Road Commission and the Territorial Highway Engineer. These reports have served as bases for decisions as to the allocation of funds for building important road and trail projects designed to promote the development of mineralized areas.

Owing to the fact that the funds provided by the Territory for cooperative work were not available for use during much of the first year of the biennium, approximately half of the sum appropriated will remain unexpended at the end of the biennium.

B. D. STEWART,
Supervising Mining Engineer.