UNITED STATES DEPARTMENT OF THE INTERIOR
J. A. Krug, Secretary

GEOLOGICAL SURVEY
W. E. Wrather, Director

Bulletin 947

MINERAL RESOURCES OF ALASKA

REPORT ON PROGRESS OF INVESTIGATIONS IN 1943 and 1944

PAPERS BY
JOHN C. REED AND OTHERS

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CONTENTS

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(Pages 1–6)

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CONTENTS

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MINERAL INVESTIGATIONS OF THE GEOLOGICAL SURVEY IN ALASKA IN 1943 AND 1944

By JOHN C. REED

INTRODUCTION

For each of the 37 years 1904 to 1940 the Geological Survey issued a report regarding the yearly production of minerals from Alaskan mines and prospects. Reports for 1941 and 1942 were withheld for a time because it was felt that the information might be of value to our enemies; but as the activity of war moved away from the coast of Alaska the need for restriction lessened, and a report covering the mineral industry for 1941 and 1942 was issued in 1944 (Bulletin 943–A). Late in 1944 the responsibility of recording Alaskan mineral production was transferred from the Geological Survey to the Bureau of Mines.

This report is directed primarily toward recording the field and office activities of the Geological Survey in Alaska during 1943 and 1944. As a result of its war programs, the technical personnel of the Alaskan Branch has been substantially increased and the branch's work has been very greatly modified to meet the changing war demands.

The primary objective of the Geological Survey in Alaska has always been to aid in the development of the resources of the Territory. This has involved field investigations, in the course of which all the known productive camps have been examined and an area of about 300,000 square miles, or approximately half of Alaska, has been mapped topographically and geologically on reconnaissance standards. Small areas where the need for more comprehensive information was most acute have been mapped in greater detail. The results of this work have customarily been made available to the public in the form of printed maps and reports. During the war years the information gathered by the Geological Survey in Alaska was made immediately

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available, both to the war agencies of the Government and to authorized individuals who had specific need of it, by means of mimeographed preliminary reports, pending the availability of permanent printed reports.

War demands resulted in a shift of emphasis of the Geological Survey's work in Alaska from a combination of economic and scientific projects to projects that would make the maximum contribution to the Nation's war plans. Consequently many of the more general and broader studies that would require years for their completion were temporarily laid aside so that those promising more immediate results could be stressed. As a result, the tempo of the work was increased and the conclusions reached were more definitely quantitative than heretofore.

FIELD WORK OF 1943

During the 1943 field season 5 general projects and 17 projects involving specific mineral localities or materials were in progress. The five supervisory projects were designed to keep track of all the Survey's work in each of five large regions of Alaska, as well as to learn about the mining activities in progress in each region. In addition the supervisors devoted varying amounts of time to brief examinations of deposits of many different types of minerals, with the primary objective of appraising the general significance of each deposit as a basis for further and more comprehensive studies where additional work seemed desirable.

In southeastern Alaska five local projects were carried out. One field party spent the summer studying the iron-copper deposits near the western end of Kasaan Peninsula, Prince of Wales Island. Several of the larger and more promising areas were mapped in detail, and a careful reconnaissance was made over much of the intervening area. At Baker Island and near Shakan on Kosciusko Island molybdenite deposits were mapped in detail. Zinc deposits at Moth Bay, Revillagigedo Island, and at the Lake claims on the mainland east of Wrangell, were studied. Detailed mapping of zinc and zinc-lead deposits in Groundhog Basin in the Wrangell district, begun in 1942, was extended to cover the area southward for several miles into the Glacier Basin, where other detailed studies were made. The more promising areas of basic and ultrabasic rocks were examined to determine the presence or absence of significant quantities of war minerals, such as nickel, chromium, and copper. In connection with these examinations magnetic investigations were made in an attempt to determine the presence, structure, and relationships of deposits of valuable minerals in these rock bodies. Detailed investigations begun in December 1942 at the Salt Chuck copper-palladium mine

were continued into the spring of 1943. The supervisor visited other areas containing deposits that may warrant further detailed investigation.

Work in the Copper River-Prince William Sound region was primarily the investigation of known copper deposits. An area at Rua Cove, on Knight Island in the Latouche district, was studied in detail, and many of the mines of the Kuskulana and Nizina districts were examined. Brief studies were made of many of the prospects and workings in areas adjacent to Prince William Sound.

Along the Alaska Railroad Belt parties were engaged in the mapping of coal deposits in the Matanuska district at Moose Creek. Zinc deposits at Mount Eielson in the Kantishna district and chrome deposits at Red Mountain on the Kenai Peninsula were mapped in detail. The supervisor made brief examinations of other mineral deposits, including the coal deposits at Herendeen Bay.

In the Fairbanks district a geologist was assigned to tungsten investigations in connection with a project being carried on there by the Bureau of Mines. Detailed studies of quicksilver deposits and further reconnaissance geologic mapping continued to be the principal activities in the Kuskokwim region, with one party assigned to the DeCourcy Mountain deposits and another engaged in reconnaissance geologic mapping in the search for other areas of quicksilver mineralization. Brief investigations of several other quicksilver areas were made. Tin investigations were carried out at Tozimoran and Morelock Creeks, and the Lost River lode deposit on Seward Peninsula was mapped in detail. Brief examinations were made of quicksilver, tungsten, and graphite deposits on Seward Peninsula, and of an asbestos prospect in the Kobuk district.

FIELD WORK OF 1944

In accordance with the general policy of keeping the activities as flexible as possible to meet constantly changing war needs and to investigate areas or deposits that seemed most likely to become possible producers, the work in the field season of 1944 was modified considerably from that in 1943. Much of the work was directed in the field by four regional supervisors.

In southeastern Alaska comprehensive and detailed examinations were made of iron and copper deposits in Jumbo Basin, and of iron-copper deposits at Tolstoi Mountain on Prince of Wales Island. At Tracy Arm, on the mainland between Juneau and Petersburg, zinc-copper deposits were systematically examined. A Geological Survey representative was assigned to study further the iron-copper deposits at Mount Andrew on Prince of Wales Island in connection with a trenching and drilling program being carried on there by the Bureau

of Mines. The regional supervisor made brief examinations of nine copper deposits, two barite deposits, and one deposit each of asbestos, lead, lead-zinc, magnetite, and tungsten.

In the Copper River region detailed work was completed at Orange Hill near the head of the Nabesna River on deposits that contain copper, molybdenum, gold, and silver. Brief examinations were made of the geology of the Alaskan portion of the Alaska military highway and of the Bering River coal field near Katalla.

In the Alaska Railroad Belt detailed examinations of coal deposits were carried out in the Matanuska and Nenana districts, and a brief investigation was made of lignite deposits near Broad Pass. In addition, the Railroad Belt supervisor made brief examinations of limestone, of a tungsten deposit, and of an asbestos deposit in his region; and of a zinc deposit on Sedanka Island southeast of Dutch Harbor. He also revisited chromite deposits at Red Mountain on the Kenai Peninsula.

In the Kuskokwim region reconnaissance geologic mapping was continued in areas not previously studied geologically by members of the Geological Survey, in the search for deposits of war minerals, especially quicksilver.

Along the lower Yukon River and at two places in the Unalakleet area coal was investigated at seven localities. The same party made a brief examination of a molybdenite prospect in the Kaiyuh Hills. A geologist was attached to a drilling and trenching project of the Bureau of Mines at the Lost River and Cape Mountain tin deposits on Seward Peninsula, and he continued his detailed investigations after the departure of the personnel of the Bureau of Mines from the area.

Five field parties were organized under a supervisory officer to examine several of the Alaskan areas in which petroleum might be found. Most of the effort was directed to detailed field work at Yakataga and Katalla in the Alaska Gulf region, on the Iniskin Peninsula in the Cook Inlet region, at Wide Bay on the Alaska Peninsula, and along the Colville River in northern Alaska.

AERONAUTICAL MAPS AND CHARTS

A major activity of the Alaskan Branch during the years 1943 and 1944 has continued to be the compilation of aeronautical pilotage maps and charts from photographs furnished by the Army Air Forces. This work was entirely financed by funds made available by the Army Air Forces and was done in close cooperation with and under the general direction of the Aeronautical Chart Service of the Army Air Forces. The work of the unit was originally restricted to Alaska, and by 1944 most of the previously unmapped portions of

that Territory had been covered by small-scale aeronautical pilotage charts. The success of the processes was so manifest and the need so great that at the close of 1944 the Alaskan Branch's work of this type was predominantly the preparation of maps of other widely distributed areas throughout the world.

Between the beginning of this project and the close of 1944, planimetric mapping of more than 6,600,000 square miles of country and topographic mapping of more than 800,000 square miles had been completed. Existing topographic data on about 3,000,000 square miles of the earth's surface were coordinated with the new aerial photography and adjusted to the planimetric maps produced from this aerial photography. By December 31, 1944, about 150 multicolor aeronautical charts had been produced, showing the usual map data in addition to layer tints and aids to aeronautical pilotage. At the close of the year a force of about 200 was employed on the project.

REPORTS ISSUED

In the years 1943 and 1944 the following geologic bulletins were published:

Bulletin 926–D, Geology of the Portage Pass area, Alaska, by F. F. Barnes.

Bulletin 933–B, Geology of the Nutzotin Mountains, Alaska, by F. H. Moffit, with a section on the igneous rocks by R. G. Wayland; Gold deposits near Nabesna by R. G. Wayland.

Bulletin 933–C, Relations of structure to mineral deposition at the Independence Mine, Alaska, by W. C. Stoll.

Bulletin 933–D, Reconnaissance of Porcupine Valley, Alaska, by Gerald FitzGerald.

Bulletin 943–A, Mineral industry of Alaska in 1941 and 1942, by P. S. Smith.

Bulletin 943–B, Mining in the northern Copper River region, Alaska, by F. H. Moffit.

The following preliminary reports were issued in mimeographed form during this period, some covering field work done wholly or partly within 1943 and 1944, others covering work done in preceding years, the office compilation of which was completed in this period. Each of these reports was announced by a press release.

Caamano Point antimony deposit, Cleveland Peninsula, southeastern Alaska, by G. D. Robinson.

Asbestos deposits of the Dahl Creek area, Kobuk River district, Alaska, by R. R. Coats.

Chromite occurrences and a nickel prospect on Baranof Island, southeastern Alaska, by M. S. Walton, Jr., and G. C. Kennedy.

Part of the Herendeen Bay coal field, Alaska, by G. O. Gates.

Coal deposits of the Costello Creek basin, Alaska, by Clyde Wahrhaftig.

Copper-bearing iron deposits of the Mount Andrew-Mamie area, Kasaan Peninsula, Prince of Wales Island, southeastern Alaska, by E. N. Goddard, L. A. Warner, and M. S. Walton, Jr.

Fluorite reserves at the Lost River tin mine, Seward Peninsula, Alaska, by R. R. Coats and P. L. Killeen.

Graphite deposits on the north side of the Kigluaik Mountains, Seward Peninsula, Alaska, by R. R. Coats.

The Iron King No. 1 copper prospect, Kasaan Peninsula, Prince of Wales Island, southeastern Alaska, by L. A. Warner and M. S. Walton, Jr.

Iron-copper deposits of the Rich Hill area, Kasaan Peninsula, Prince of Wales Island, southeastern Alaska, by R. G. Ray.

The Poor Man iron deposit, Kasaan Peninsula, Prince of Wales Island, southeastern Alaska, by L. A. Warner and M. S. Walton, Jr.

Iron and copper deposits at the Haida mine and the Copper Center prospect, Kasaan Peninsula, Prince of Wales Island, southeastern Alaska, by L. A. Warner and R. G. Ray.

Lead-zinc deposits at the Lake claims, Wrangell district, southeastern Alaska, by H. R. Gault and G. M. Flint, Jr.

The Shakan molybdenite deposit, Kosciusko Island, southeastern Alaska, by G. D. Robinson.

The nickel-copper deposits on the west coast of Chicagof Island, southeastern Alaska, by G. C. Kennedy.

Geology and nickel-copper deposits of Yakobi Island, southeastern Alaska, by G. C. Kennedy and M. S. Walton, Jr.

The ultrabasic rocks of the Blashke Islands, Kane Peak, and Mount Burnett, southeastern Alaska, by G. C. Kennedy and M. S. Walton, Jr.

Quicksilver deposits in the Cinnabar Creek area, Georgetown and Akiak districts, southwestern Alaska, by W. M. Cady.

Occurrences of scheelite in the Solomon district, Seward Peninsula, Alaska, by R. R. Coats.

Zinc deposits of Groundhog Basin, Wrangell district, southeastern Alaska, by H. R. Gault.

Geology and mineral deposits of Glacier Basin and vicinity, Wrangell district, southeastern Alaska, by H. R. Gault, D. L. Rossman, and G. M. Flint, Jr.

The zinc-copper deposits near Moth Bay, Revillagigedo Island, southeastern Alaska, by G. D. Robinson.

Zinc deposits of Mount Eielson district, Alaska, by Clyde Wahrhaftig.

The zinc deposits of the Lucky Boy Claims, Dora Lake, Prince of Wales Island, southeastern Alaska, by W. S. Twenhofel.

Press releases embodying technical information and designed to take the place of preliminary reports pending the publication of the material in printed form were issued on the following subjects:

Zinc-copper deposit at Tracy Arm, Juneau district, southeastern Alaska.

Magnetite deposits at Jumbo Basin, Prince of Wales Island, southeastern Alaska.

Press releases covering maps produced as a result of the following field investigations were issued:

Mineral deposits at Orange Hill, Alaska.

Baker Island molybdenite deposits, southeastern Alaska.

Quicksilver-antimony deposits in the Sleitmut area, Georgetown district, southwestern Alaska.

Tungsten deposits of the Hyder district, Alaska.

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