UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey
Washington

THE ZINC DEPOSITS OF THE LUCKY BOY CLAIMS, DORA LAKE, PRINCE OF WALES ISLAND, SOUTHEASTERN ALASKA

By

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Introduction

The Lucky Boy group of eight claims is along the southeastern and southern edges of Dora Lake, a small lake about one-quarter of a mile south of the head of Dora Bay, a small fiord extending south from Cholmondeley Sound on the east coast of Prince of Wales Island, southeastern Alaska. The claims are best reached from the head of Dora Bay by a good trail to the lower end of Dora Lake (alt. ± 60 feet) and thence across the lake by skiff to the upper end (see fig. 1).

L. C. Smith, S. V. Van Zandt, W. H. Roselle, and Clara Rung, all of Ketchikan, Alaska are said to have located the claims about 1933 or 1934. Previous to that time the property is reported to have been claimed by Jack Westlake and to have been known as the Complex group of claims. Apparently the Lucky Boy claims include most if not all of the Lady of the Lake claims and the Oregon and Idaho claims mentioned by the Wrights 1/.

Geology of the deposits

According to the Wrights 1/:

"..... limestone and schist constitute the principal bedrock exposures within this area, and on the west side of the bay these are intruded by a wide area of granite, which also forms the west shore of Dora Lake."

The mineral deposits are quartz-calcite breccia veins that cut across the banding in the schist. The principal sulfide minerals are sphalerite, galena, chalcopyrite and pyrite. Only locally do the sulfide minerals exceed about 10 percent of the total vein material and at most places the percent of sulfide minerals is estimated to be about 5. Numerous partially replaced schist and limestone fragments occur within the veins.

The Lucky Boy claims cover two general areas of mineralization; one about 750 feet south of the southern end of Dora Lake and the other along the east shore of the lake about 1200 feet from Dora Lake (see fig. 1).

South group of veins

The south deposit is that mentioned by the Wrights 1/ as within the Oregon and

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1/ Wright, F. E. and C. W., the Ketchikan and Wrangell mining districts, Alaska: U. S. Geol. Survey Bull. 347, pp. 171-172, 1908.

Idaho claims. The deposit is a quartz-calcite vein that strikes about N. 22° E and dips about 35° E. The surface cuts expose the vein for about 380 feet approximately along the 125 foot contour of the east slope of the north-south valley that extends from Dora Lake to Mineral Lake. Underground openings expose the vein for a strike distance of about 110 feet and for a dip length of about 60 feet. On the surface the vein is persistant and carries a relatively large amount of sphalerite. However, the vein as exposed underground is discontinous and except on the north end of the crosscut there is only slight sphalerite mineralization. The inclined raise that extends from near the face of the adit to near the surface is only slightly mineralized except near the surface where the sphalerite content increases gradually toward the surface.

A chip sample taken across the vein at the northernmost pit contained 8.82 percent of zinc, and only minor amounts of lead, copper, gold and silver. These two samples represent material that is estimated to be the richest in the vein. The vein exposed underground is estimated to carry one-third or even one-quarter the amount of sphalerite that the samples indicate the vein carries in the surface cuts.

For purposes of estimating reserves it is assumed that the mineralized zone is 380 feet long, 2 feet wide and extends down the dip for about 20 feet. A figure of 20 feet is used because the vein as exposed in the raise and in the crosscut does not appear to be persistent or well mineralized at depth. Because the two chip samples were taken from some of the richest parts of the vein, it is assumed that the average grade is considerably lower than the analyses would indicate; probably about 3 percent of zinc. It is estimated that about 1500 tons of 3-percent zinc are indicated in this deposit. No inferred tonnage has been estimated because the deposit is definitely limited in depth as shown by the nearly barren underground workings. If a larger tonnage is present it will probably be found by exposing the vein for a greater distance on the surface.

The north group of veins

The north area of mineralization includes at least three veins. All of them are quartz-calcite breccia veins slightly mineralized with sphalerite, galena, pyrite, and chalcopyrite.

A vein, 1½ feet thick that is partially exposed at the beach along the east shore of Dora Lake and in two pits for a distance of 160 feet, strikes about N. 10° W. and dips about 70° W. A chip sample taken across the vein at the beach contained 3.80 percent of zinc and 0.36 percent of lead.

Two other veins (see fig. 3) crop out at an elevation of about 330 feet on the east side of Dora Lake about 400 feet southeast of the vein on the beach. The most northerly of the two veins strikes about N. 35° W. and dips about 70° SW. It averages about 7 feet thick and is partially exposed for a length of 150 feet. The other vein strikes about north and dips about 80° W. It is about 20 feet thick on the surface and 5 feet wide as exposed in the 65-foot adit. It is exposed for a length of 85 feet and crops out over a vertical distance of 80 feet.

One sample was selected from a small ore pile near the most northerly of the two veins. It contained 5.23 percent of zinc, 2.05 percent of lead and minor amounts of gold and silver. The sample was selected as the average of the better grade material and the entire vein undoubtedly averages much less than the sample would indicate; probably about 2 or 3 percent of zinc and about 1 percent of lead.

A chip sample was taken across the most southerly of the two veins in the 65-foot adit. The sample contained 0.31 percent of zinc and 0.89 percent of lead. This sample probably is representative of the average content of the vein.

Of the three veins in the north area only the large one cut by the adit is well enough exposed to permit a reasonable estimate of reserves. On the basis of a length of 100 feet, a depth of 100 feet, a width of 7 feet, a conversion factor of 10 cubic feet to a ton, it is estimated that there are about 7,000 tons of material estimated to contain about one-third of a percent of zinc and about one percent of lead with minor amounts of gold and silver.

May, 1944.

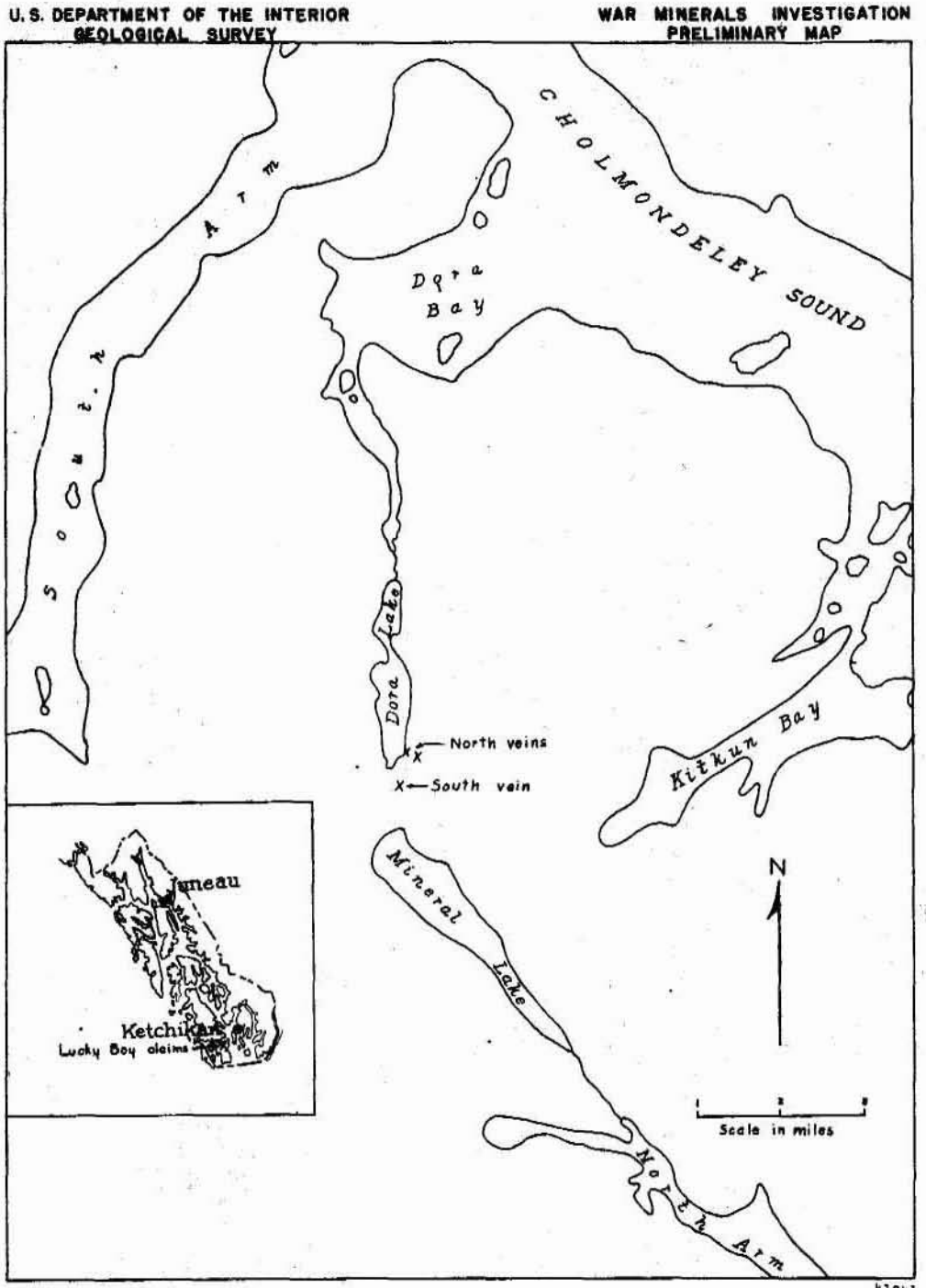

FIGURE 1 SKETCH MAP SHOWING LOCATION OF LUCKY BOY ZINC DEPOSITS, 41941
Dora Lake, Prince of Wales Island, southeastern Alaska

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WAR MINERALS INVESTIGATION
PRELIMINARY MAP

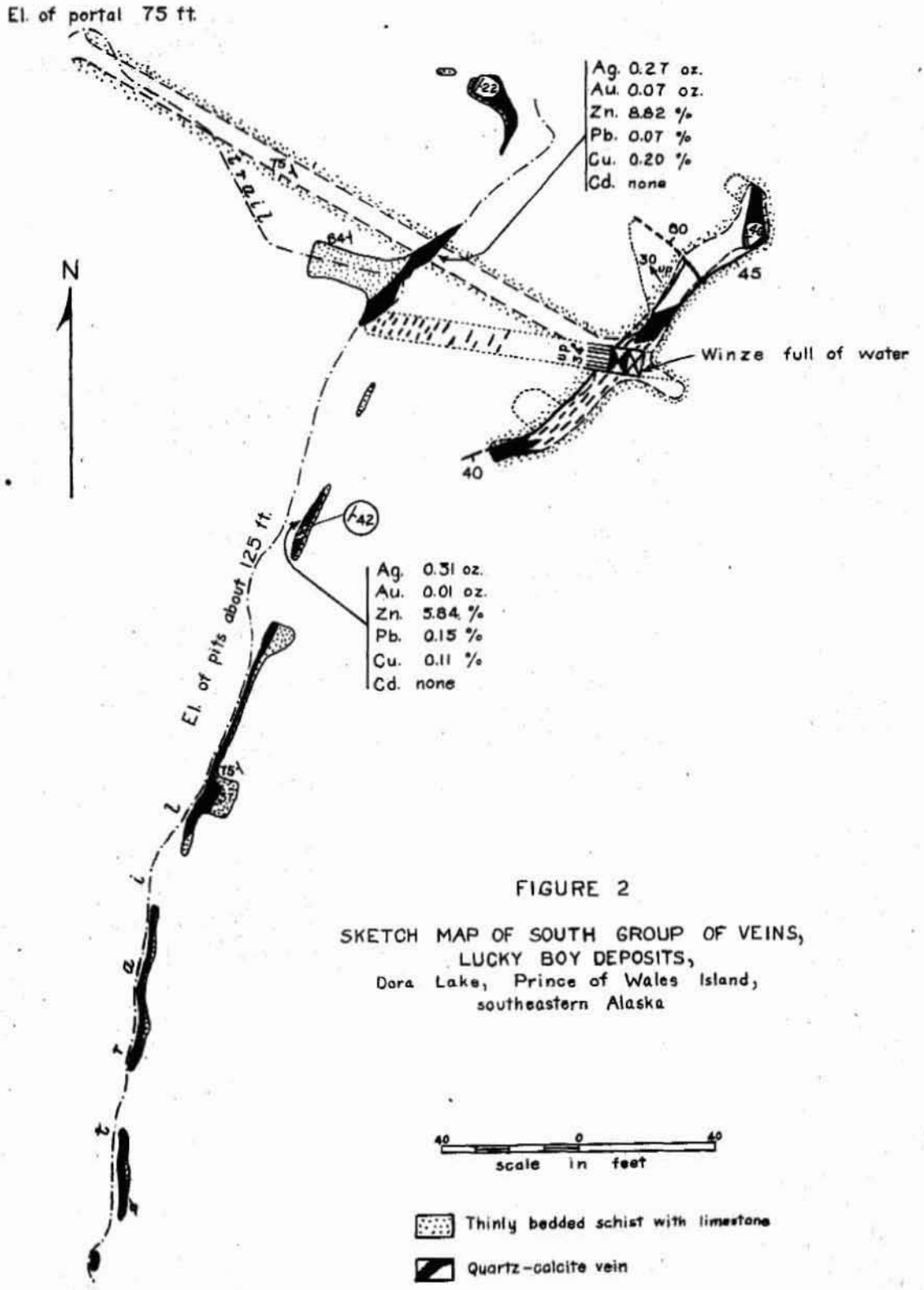

FIGURE 2

SKETCH MAP OF SOUTH GROUP OF VEINS,
LUCKY BOY DEPOSITS,
Dora Lake, Prince of Wales Island,
southeastern Alaska

J. C. Reed, 1941

41941

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WAR MINERALS INVESTIGATION
PRELIMINARY MAP

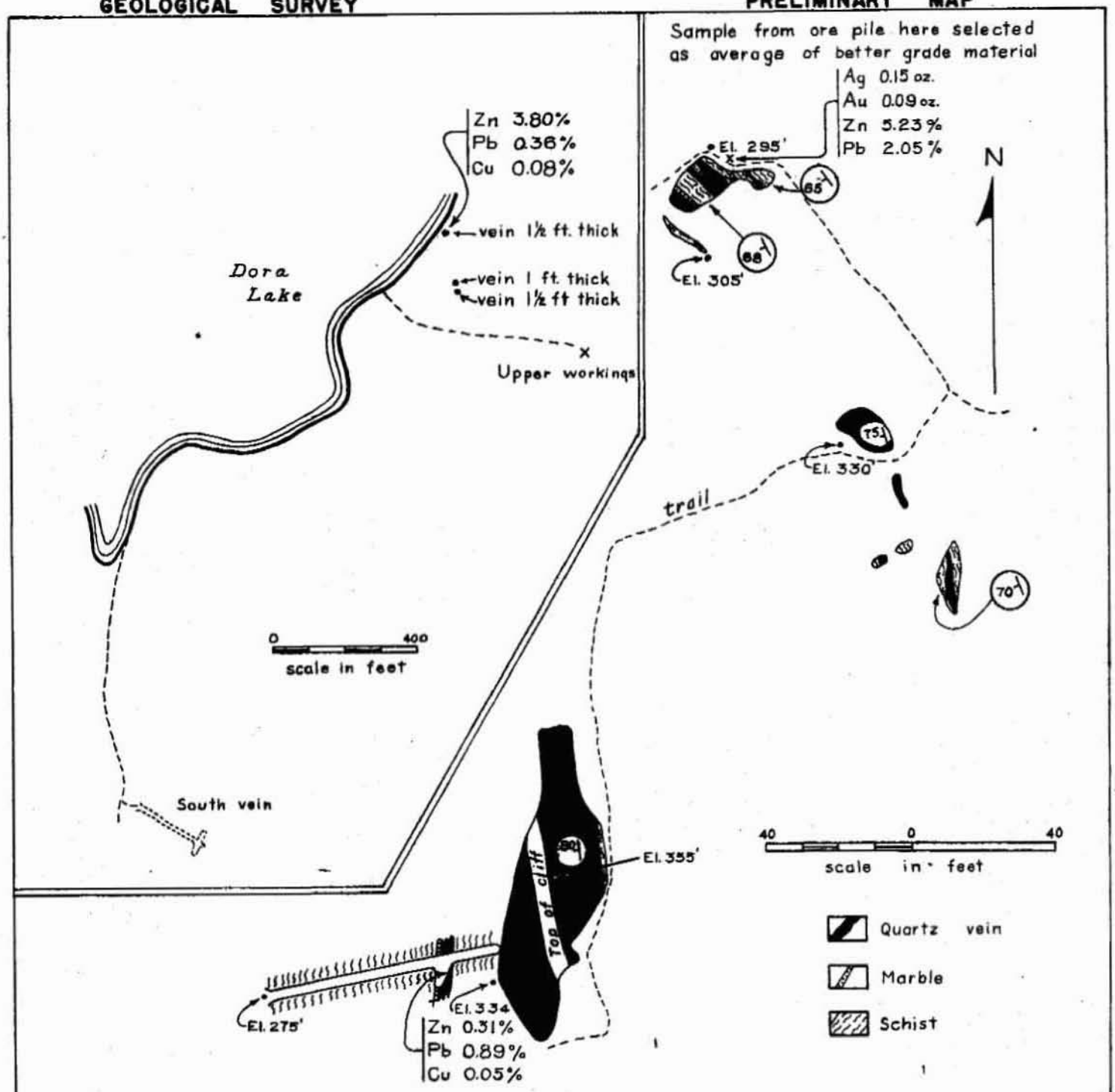

FIGURE 3 SKETCH MAP OF NORTH GROUP OF VEINS, LUCKY BOY DEPOSITS

Dora Lake, Prince of Wales Island, southeastern Alaska

J. C. Reed and W. S. Twenhofel, 1943

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