

open-cuts show the dimensions of the occurrence of magnetite to be about 300 feet long by about 150 feet wide by about 100 feet high above the floor.

The ore-body outcrops on a steep slope about 100 feet high, the lower part of which is diorite and the upper part magnetite. The face of the slope has been stripped 220 feet from east to west, and open-cuts and adits have been driven northward from near both ends of the stripping. The easterly open-cut is about 100 feet from the east end, and is 36 feet long, serving as an approach to an adit 40 feet long. The open-cut is made through quartz diorite for 18 feet, where the contact with magnetite is exposed and the remainder of the open-cut, as well as the adit, is in solid magnetite. The westerly open-cut is 37 feet from the west end of the stripping and 83 feet from the other open-cut. This cut is driven 32 feet as an approach to a shaft. Of the 32 feet, 20 feet are through quartz diorite to the contact with magnetite, and the remainder, as well as the short adit, through magnetite. The faces of both adits are in solid magnetite, so that the width of ore is undetermined. The dip of the diorite-magnetite contact is nearly vertical, and the strike of the magnetite lens is eastward.

The quantity of sulphides, mostly iron pyrites, is greater in the *Paxton* ore than in the other bodies. A sample taken along the adit by McConnell, assayed: "Iron, 59.40 per cent.; copper, 0.30 per cent.; sulphur, 1.07 per cent."

A sample taken by Lindeman from the same adit assayed: "Iron, 64.48 per cent.; sulphur, 1.866 per cent.; phosphorus, 0.005 per cent.; silica, 4.47 per cent.; copper, 0.22 per cent.; magnesia, 1.13 per cent.; lime, 1.32 per cent.; alumina, 0.66 per cent."

The third important occurrence of magnetite on the property of the Puget Sound Iron Company is known as the *Lake* mine, and is 1,300 feet east from the *Paxton*. The occurrence of magnetite lies in a bluff about 80 feet high at the contact between limestone and porphyrite, with porphyrite on three sides and with a body of garnetite and epidote on the north side separating the magnetite and limestone. The strike is east and dip nearly vertical. The mass of magnetite measures about 300 feet in length, with an average width of about 150 feet. It has been developed by an open-cut 100 feet long from east to west by 60 feet wide and about 80 feet high at the face. The magnetite in the *Lake* deposit is finer grained than in the other large masses, and free from iron and copper sulphides. A grab sample taken from the dump assayed: Iron, 58.0 per cent.; sulphur, 1.6 per cent.; phosphorus, trace; silica, 0.5 per cent.

McConnell reports that a rough general sample taken from the faced magnetite cliff, and assayed in the laboratory of the Canadian Mines Branch, yielded: "Iron, 57.50 per cent.; copper, trace; sulphur, 0.046 per cent."

Lindeman reports an average sample from the *Lake* mine assaying: "Iron, 59.57 per cent.; sulphur, 0.137 per cent.; phosphorus, 0.057 per cent.; silica, 8.33 per cent.; copper, 0.08 per cent.; alumina, 1.71 per cent.; lime, 3.82 per cent.; magnesia, 1.05 per cent."

There are several lenses of magnetite on the property of the Puget Sound Iron Company in addition to those on which development-work has been done, but while some of the occurrences are of considerable extent as shown by the surface outcroppings, no attempt has been made to prospect them. South from the *Lake* mine there is a line of narrow magnetite lenses within about 1,000 feet, all of which occur in porphyrite at considerable distances from limestone and diorite contacts. The longest of these is 220 feet, with a width varying from 10 to 20 feet. Two other lenses measure respectively 54 and 50 feet in length, with widths from 10 to 20 feet. The other lenses along this line are smaller.

The magnetite in all of these occurrences is very pure, and an assay of a sample from the longest lens is reported by McConnell as yielding: "Iron, 69.40 per cent.; copper, none; sulphur, 0.01 per cent."