

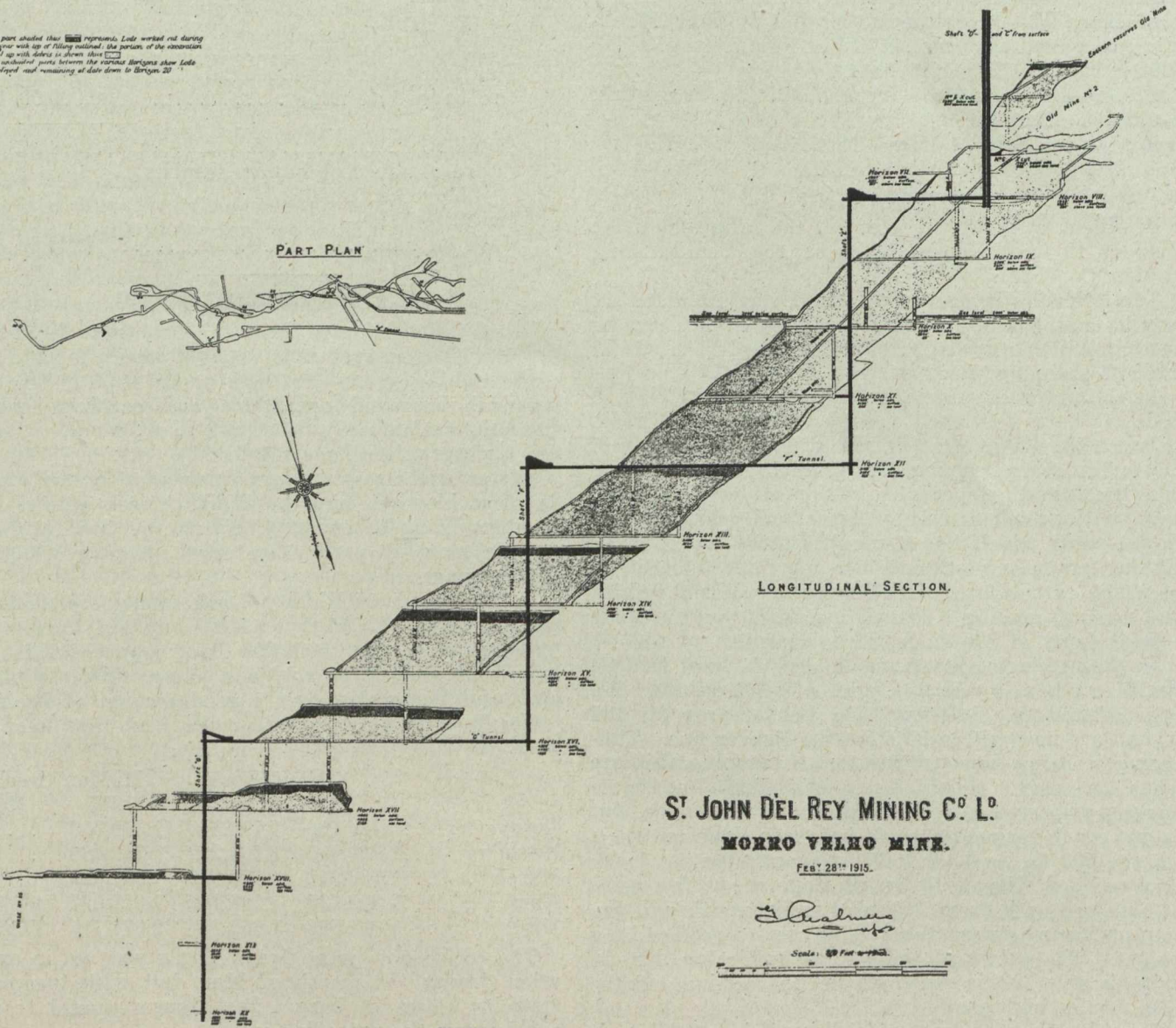
# VENTILATING THE WORLD'S DEEPEST MINE

By G. Chalmers, Superintendent Morro Velho Mine, Brazil.

Investigations in connection with ventilation at the Morro Velho mine, of the St. John Del Rey Mining Co., Ltd., substantiate previous reports that the system of distribution of the air, although meeting the case satisfactorily and in a most economical manner in the past, is becoming, as greater depth is attained, defective, and requires modification. Even when on rare occasions the downcast air at the bottom of the mine is comparatively low in moisture, by the time

increasing the volume of air passing through the deepest explorations, and by leading the allotted quantity (after it has passed over the stopes of one horizon, or at the outside two) directly to the upcast and away to surface, instead of passing it over the stopes above as in the old and existing system, the best possible conditions will be obtained. Due to the fact of our now being in a much better position as regards the main-way into depth, namely, of its being in advance of the

The part shaded black represents Leds worked out during the year with up of filling material. The portions of the excavation filled up with debris is shown black. The unshaded parts between the various horizons show Leds developed and remaining at date shown in Section 20.



Old leads are here shown up to the end of February, 1915.

it has passed over two horizons it has become saturated, partly from the watering of the ways to lay dust, the sweat from the bodies of workmen, and from the breath of the animals and men. Consequently the efficiency of the men on the stopes above must be considerably impaired; in fact, according to authorities on the subject, 86° wet bulb (which represents the conditions of, say, horizon 16, at any rate during the rainy season) is supposed to be the limit at which men can work with full efficiency, and as the mine deepens this will, of course, be more seriously felt. But by largely

explorations, Captain Watts has proved that it is possible to work each block by one vertical winze only, and our calculations show that this one winze and a steel pipe of 3 ft. to 4 ft. in diameter, will, with the eastern paved air-way give ample ventilation to the stopes during the working out of a block of mineral. Consequently, one winze for mineral and filling to act as a temporary upcast, which during the working out of each block disappears as the mineral is removed, is sufficient for the mining operations, and by sinking another vertical winze from one horizon to the