

UNION MINE SECTION 643-87G

The workings of the Union Company are situated at the head of the gully in which the White Lead lies. The main shaft at the time of my visit was 88 feet deep, and levels had been opened at 80, 63, and 30 feet. To the north east of the main shaft are three small ones, from which older workings were made; these communicate with an old north-easterly drive from the main shaft at the highest level. There is no regular lode in the mine, - the gold being found in a white sandstone traversed by numerous small quartz veins. At No. 1 level and No. 2 level this auriferous rock forms the hanging wall of a vein of quartz from 6 to 12 inches wide, accompanied by from 18 inches to 2 feet of broken wall-rock or "mullock"; this vein strikes about N65°W and dips to the SW. After passing through it no gold is found. At the bottom level the same vein is again met with, but smaller, and towards the south-east end much broken into leaders; here, too, the gold is found mostly on the hanging wall of the quartz vein. At this level, however, a drive to the north east towards the old shaft got some gold almost under the old workings. The gold in these appears to have been in white sandstone, with fine quartz veins through it, lying on the hanging wall of a group of small quartz veins striking to the north west. In the bottom level there are numerous small leaders running about east and west, as if the two sets of veins seen running towards on another in the top level were coming into one course down below. Throughout the mine there are sudden changes of country from white clayey sandstone to black soft slate and soft white slate; and these latter beds, which appear often to lie in flattish layers, do not appear to carry gold like the more porous white sandstone. As will be seen later on, there is reason to believe that the strata of the country in this district have a north-westerly strike and a rather high angle of dip; and this makes it probable that these apparent beds of black and white slate and sandstone are not true members of the series of stratified rocks forming the general country rock, but are altered parts of one or more of these strata, differently acted upon by the solutions that have deposited the gold. The more permeable sandstone strata would have a better chance of being impregnated with gold than the less pervious slates. Be this as it may, we have in this mine an instance of the country rock in the vicinity of a quartz vein containing enough gold to be worth crushing. The width of the gold bearing zone seems to vary in the different levels, - being about 10 feet wide in the No. 2 and over 15 feet in the top and bottom levels, but not by any means all of it is worth crushing; and in the present state of development of the mine, it is hard to say where to look for the best portions. From the old workings near the surface gold is reported to have been obtained by roughly crushing and cradling the auriferous sandstone: from No. 1 level a crushing is said to have yielded about 15 dwt. to the ton. Samples taken by me from the bottom level gave very little gold, but small prospects were obtainable from the paddock of stuff that had been saved. According to "The Daily Telegraph" of March 4th, 1894, a crushing of 6 tons yielded 1 oz. 16 dwt. of gold, or at the rate of 6 dwt. to the ton.

Since my visit a small battery of five stamps has been put on the mine, so that it will be possible to test it thoroughly. The auriferous sandstone is easily crushed, and the zone of rock containing gold seems pretty wide, so there seems some hope that a very low return may be made to pay, say 2½ to 3 dwt. to the ton. It would of course be necessary to crush large quantities of stone in order to be able to make any profit out of rock of such low value, and at present

it cannot be said that there is material in sight that would justify the erection of a large crushing-plant. Nevertheless, the formation is auriferous, and sufficiently promising to deserve continued prospecting, the small battery being used to ascertain the value of the rock coming to hand from time to time. There is a possibility of a more defined body of quartz being found at greater depth, and I should recommend sinking a fair-sized main shaft instead of the small prospecting one now used, to try for gold at lower levels.

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"Back Creek Goldfield", Montgomery, 1894.