

Alexander River Reefs Mine.—Work was carried on steadily at this mine, an average of seventeen men being employed. Unfortunately, developments have not been as satisfactory as could be desired. Bull crosscut was driven a distance of 105 ft. to prove the country north of the Bull block of stone, and also to ascertain if any other reef existed north on this line. A reef-track, encountered at a distance of 88 ft. from the surface, and believed to be on the Bull line of reef, was driven on for 49 ft., but with disappointing results; driving has ceased. No. 2 crosscut: No. 2 level south was driven for a distance of 110 ft., but has been suspended at that point. At a distance of 22 ft. from the crosscut a block of stone was encountered which measured 15 ft. in length, with a width of 4 ft.; its values were low. Driving was continued for a farther distance of 10 ft., when another block of stone was encountered, and on this being penetrated it proved to measure 20 ft. in length, with a width of 2 ft., values equalling £1 12s. per ton. No. 4 crosscut: No. 1 level north was driven on reef-track for a distance of 162 ft., but, though several narrow bunches of ore were passed through, nothing of importance was developed. No. 4 crosscut: No. 1 level south was driven on stone averaging 2 ft. in width, with a length of 40 ft. Driving was suspended at this point, as values were low. No. 4 crosscut: No. 2 level south was driven on reef-track for a distance of 86 ft., but driving was suspended at that point as nothing of importance developed. Loftus reef, Mullocky Creek: No. 1 level was driven for a distance of 175 ft., 93 ft. being on stone about 15 in. in width, and carrying values of something over 1 oz. to the ton. A rise was put up on this block for a distance of 43 ft., and proved stone with a width of 10 in. to a height of 15 ft. The remainder of the rise was in faulted country. Mullocky Creek No. 2 crosscut was started with the view of intersecting an assumed downward continuation of a large reef exposed on the surface, which is known as "Downey's." The crosscut, which has been driven a distance of 192 ft., passed through reef-track at 186 ft. from the portal. Driving was continued. Surface prospecting has been carried on for several months with satisfactory results. Two lodes have been discovered, one being traced for a length of 500 ft. on the surface, with widths varying from 1 ft. to 10 ft. Samples taken from trenches extending over this 500 ft. gave an average result of £2 10s. per ton. Considerable time must elapse before these latest discoveries can be satisfactorily tested, as one shift only is worked, and no power-drills are supplied. The lodes are situated at an altitude of 1,300 ft.—1,400 ft. above the floor of the valley—and are rather difficult of access. Crushing was continued with the small five-head battery until the end of March, when operations were suspended. The mill was formerly driven by means of a petrol-engine, which was later discarded owing to excessive costs, and water-power is being substituted in its stead. Owing to its situation (600 ft. above the valley floor), it was not found possible to get enough water to permit of more than intermittent crushing. To overcome this difficulty, and at the same time increase crushing capacities, it was decided to pull down and re-erect the old mill at a previously chosen site at the creek-level. Five extra head of stamps are to be installed at the new mill, and the whole plant, when completed, will consist of one Gate's gyratory crusher, ten head of stamps, two Wilfley tables, and eight cyanide-tanks. No tube mill is to be installed, nor is sliming to take place. It is estimated that the new battery should be capable of crushing 25 tons per day, which will be a considerable advance in tonnage per head of stamps over that obtained from the old mill. Ore-transportation between mine and battery is to take place over an aerial tram-line, in course of construction, which is to be operated by gravity. Reconstruction work should be finished in May, 1929, when crushing operations will be resumed. A total of 285 tons of quartz treated at the mill yielded 334 fine ounces of gold, valued at £1,400 12s. 11d.

Hercules Mines Consolidated, Ltd. (Keep-it-Dark).—During the past year work was confined to stoping above the Golden Ledger No. 2 adit, and driving south on the Hercules line in the Keep-it-Dark battery level. In the south end of the stopes 78 ft. in height was stoped out, the reef averaging 4 ft. in width over a length of 112 ft. In the level this block was 50 ft. in length, and averaged 2 ft. 6 in. in width, with values of about £2 per ton. As stoping proceeded upwards the reef both widened and lengthened, but values practically disappeared, giving a return of 10s. only per ton of ore treated. In the north end a small block was encountered which averaged 20 in. in width over a length of 30 ft. Values of £2 per ton were consistent throughout, but its small size proved a deterrent to profitable working of the ore. In the battery level driving south was continued on the Hercules line for a distance of 160 ft., making the total distance driven from the point of intersection equal to 185 ft. In places small bunches of ore were disclosed which carried unpayable values. Stone 1 ft. wide was struck at 91 ft. and continued to a distance of 110 ft., carrying values from 1 dwt. 7 gr. to 5 dwt. 6 gr. per ton. From 110 ft. to 160 ft. the stone was broken and values unpayable. At 160 ft. stone again came in, which, averaging 2 ft. 6 in. in width, continued for a distance of 25 ft., where driving was suspended. The average values were low, amounting to 3 dwt. 6 gr. per ton. 1,115 tons of stone were produced and crushed, for a return valued at £915 10s. 1d. £667 10s. 4d. and £237 19s. 9d. were the gold-values received from amalgamation and cyanidation respectively. During the year the average number of men employed in mining and crushing operations was twelve. Work at mine and mill was suspended on the 31st August.

Westport District.

Britannia Mine.—Work at this mine has been confined to sinking a winze from the surface to No. 1 level, and stopping some ore in preparation for crushing, the latter operation being expected to start early in the new year. On an average seven men were employed throughout the year.

DREDGES.

Rimua Flat Dredge.—This dredge continued to operate very successfully, and managed to work for a total of 308 days, or 7,392 hours, representing 84 per cent. of the total possible digging-time. During the year the dredge dug 29.7 acres of land, treating in all a total of 1,880,847 cubic yards of gravel. From the above gravel gross values equalling £57,725 were extracted, showing an average gravel content of 7.37d. per cubic yard treated. Outside of the usual upkeep and repairs, no improvements were added to the dredge. A change was made in the method of taking large boulders off the bucket-line on the upper tumbler, which resulted in a material saving of time. It was planned during the month of December to overhaul the digging-ladder, putting in new and heavier angles on the lower end. To prevent the buckets from damaging the under-side of the ladder a new method of reinforcement was adopted. During the year both Mines Department and company's Keystone drills were kept in operation, a total of sixty-eight holes having been completed. The drilling was done for the purpose of accurately establishing the average value of the gravel in certain sections of the property, which in the preliminary drilling had been more or less sparsely tested. The value of approximately 5,000,000 cubic yards was thus ascertained during the year. Results of the sixty-eight drill-holes give an average depth of 38 ft., with an average gravel value of 6.5d. per cubic yard. It is estimated that the gravel treated for the year 1929 will not be of the same high grade as that washed during 1928. It is apparent from the drilling-work which has been done that there is a lean area several hundred feet in width traversing the property just in advance of the present position of the dredge. On an average fifty-three men were employed throughout the year.

Terrace Gold Dredge (New River).—This plant ceased to operate at the end of April, as it was found that various working-parts possessed insufficient strength to cope with the heavy ground encountered. A programme of extensive reconstructive work was put in hand immediately dredging was suspended. A longer and more powerful digging-ladder is to be installed, heavier and larger buckets are to be put on, and such other improvements made to the gear as circumstances warrant. 32,000 cubic yards of ground were treated during the period covered by dredging operations, and from this gravel 219 oz. 1 dwt. gold were obtained, which was valued at £886 19s. On an average nine men were employed throughout the year. If anticipations are realized, a resumption of operations should occur about April, 1929.