

diminishing in size, and losing values from the surface downwards. A small amount of stoping was done on Loftus reef, but work here had to be discontinued owing to the values being contained in pyrites. Stopping was likewise undertaken on Mullocky Creek level, only to be shortly given up on account of the lode-matter being very hard and not suitable for operating on with hand work—the only labour available. Bull Creek sections (McVicar): Work was recommenced in this portion of the mine with two men towards the middle of September, and the number gradually increased from then onwards until thirty-five men were so employed. No. 3 stope, McVicar block: A solid stope was opened out from a rise 22 ft. above No. 3 level, and advanced 18 ft. to the south and 14 ft. to the north, all on reef averaging 6 ft. in width, and with values at £5 4s. per ton. The lode faulted going north, but was recovered again and then proved to be a large body of good stone. No. 3 Intermediate level: This was opened out 22 ft. above No. 3 level, and driven for a distance of 59 ft. on reef with a value of £4 8s. per ton over a width of 7 ft. 6 in. The north end of this block has not yet been reached. Reef 8 ft. showing at the face. No. 3 north level: A drive was started 214 ft. from the portal in order to prove the stone underfoot in the intermediate above this level. The first 32 ft. exposed a small reef-track several inches wide. The lode then came in and was driven on for 86 ft., with values at £4 19s. per ton over an average width of 2 ft. 10 in. Driving is being continued. No. 3 rise: This is situate north of the main crosscut, and same was up a height of 9 ft., from which point it has been continued and carried on to 22 ft., where a connection was made with the Intermediate. Reef formation and small boulders of quartz were carried the full distance, but no payable ore was seen until the level was reached. No. 4 level north: This was started 397 ft. from the exit to No. 4 crosscut and driven north for 52 ft. Occasional boulders of stone were passed through with this work, but these contained no values worthy of note. Stopping has been carried out on No. 3 level (McVicar block), over a reef length of 130 ft. The lode varies from 3 ft. to 10 ft. in width, and gives promise of being able to yield an increased tonnage during 1932. Reduction plant: The battery was kept running intermittently until October last with two shifts daily of eight hours each, and since then three shifts daily have been worked. 3,754 tons of ore was crushed for a yield of 3,017 oz. 13 dwt. of gold, of which 2,262 oz. 19 dwt. was won by amalgamation and 754 oz. 14 dwt. by cyanidation, the value of the whole recovery being £16,053 2s. 8d. (inclusive of premium on gold and premium on exchange). Twenty-seven men were employed on an average for the period. The total yield of bullion since the commencement of work amounts to 11,674 oz. 2 dwt., valued at £46,703 6s. 11d.

Homer Mine.—Work at this mine during the year chiefly consisted of completing the erection of the five-head stamper battery, the amalgamating-table, as mentioned in last report, together with the construction of a chute to be used for the purpose of gravitating ore between the trucking-level and mill. An 11 h.p. Diesel crude-oil engine was also installed. This is used as a power unit for running the reduction plant, and is said to give complete satisfaction. Crushing was commenced at the beginning of November and continued from then on until the end of December. The ore treated during this time amounted to 310 tons (at grass), and from this was obtained 15 oz. 14 dwt. of gold, valued at £51 9s. 6d. An average of two men was employed throughout the year.

New Big River Mine.—This mine has been idle for the year, but is not likely to remain so much longer as active preparations are being made to carry out certain definite prospecting-work on its upper levels. The total quantity of gold produced from this mine amounts to 97,651 oz. 1 dwt., valued at £390,612 4s.

Wealth of Nations (Progress Mine).—No work has taken place at this company's mine during the year. The treatment plant, however, continued to operate on residues formerly dumped (and which are largely oxidized), with satisfactory results. The quantity of material treated amounted to approximately 1,000 tons, and from this was obtained 400 oz. 10 dwt. of gold, valued at £1,593. Mr. A. P. Watson, battery superintendent, and six men employed. The total quantity of gold produced from this mine amounts to 370,231 oz. 3 dwt. 2 gr., valued at £1,481,368 12s. 10d.

Westland District (Ross).

Mount Greenland Mine (W. O. Bierworth, Superintendent).—This mine—shut down for a lengthy period—recommenced operations during the early part of the year, and has since succeeded in producing and treating some 740 tons of ore, which gave a yield of 248 oz. of gold, valued at £1,077 7s. 11d. The average number of men employed was four. The total yield of gold from this mine amounts to 2,282 oz. 16 dwt. 5 gr., valued at £9,200 7s. 3d.

DREDGING.

Rimu Dredge (A. Archer, Dredgemaster).—This company's 10-cubic-foot bucket-line dredge was in operation for a portion only of the year, there being a cessation of work from the 10th June to the 5th October, to permit of the transference of machinery and equipment from the old to the new structure. The annual production and yardage figures, owing to the four months' idleness referred to, are consequently affected, and show an equivalent decrease from those obtained over the previous period. During the year the dredge excavated and treated gravel from an area comprising 21.33 acres, with an average depth of 42 ft. The old and new dredges were in operation for a total of 4,360 hours 28 minutes, during which time they dug and treated a total of 1,417,925 cubic yards of material, at an average rate of 325 cubic yards per digging-hour, which represented an increase in digging efficiency of 7 cubic yards per digging-hour when compared with similar work done during 1930. The gold content of the gravel treated throughout the year showed an increase of 0.9d. per cubic yard over that treated in 1930, and had it not been for the four months' shut-down, the increase in gravel values would have been substantially reflected in the gross production. Operating-costs for the periods during which the dredge was digging showed an increase of 0.29d. over that of the previous year, this increase being due to the cost of parts placed on the new dredge, and charged direct to maintenance. The new (all steel) dredge commenced digging-work on 5th October, and has been in continuous operation since that date. Owing to the fact that the dredge was obliged to dig its way out of the construction pond through a confined strip of ground, and make a turn before starting on straight-ahead digging, it has been found rather difficult to give accurate comparison figures as to the digging efficiency of the new machine. The three months digging to the end of the year, however, show an average digging-rate of 368 cubic yards per hour, or an increase of approximately 14 per cent. over the best annual average of the old dredge. It is expected, with better digging conditions and a larger pond, that the percentage of increase will be improved to a greater extent still. The new dredge is a substantial, well-built structure, and one that promises to fulfil in every way all that is expected of it. Fifty-four men were employed on an average throughout the year. The total yield of gold since the commencement of operations amounts to 118,632 oz., valued at £474,862.

Okarito Five-mile Beach Dredging Co., Ltd. (D. Mitchell, Dredgemaster).—Productive work started with this dredge on 22nd August, and continued almost without interruption until the end of the year. The total period worked amounted to 2,139½ hours over 119 days, which represents 75 per cent. of the possible digging-time. 119,412 cubic yards of material were treated altogether, and from this was obtained 1,968 oz. of gold, valued at £10,053 17s. 8d. Sluicing (blow-up) operations were carried out on the claim prior to the dredge commencing work, and resulted in the recovery of 166 oz. 3 dwt. of gold, valued at £793 8s. 7d., from 51,200 cubic yards of sand and gravels. The total quantity treated therefore amounts to 170,612 cubic yards of material, and the yield obtained therefrom to 2,134 oz. 3 cwt. of gold, valued at £10,847 6s. 3d. An average of fourteen men was employed throughout the year.