

SECTION IV.—GENERAL REMARKS.

(a.) MINING OPERATIONS.

North Auckland Coalfield.

No new collieries have been laid down on this coalfield during the year, and those in operation are not extensive. The workable coal-deposits have proved small in area, and this necessitates mining operations in several separate sections at the principal mines near Hikurangi.

Hikurangi Colliery.—There has been a small decline in the annual output. Owing to flooding by surface water collected in swamps, considerable inconvenience has been experienced in the deep workings in the vicinity of the limestone rocks; ventilation also has been impaired. The area remaining unworked does not appear extensive.

Northern Colliery.—The Northern Coal Company has obtained output from three sections—viz., the Northern, the Waro, and the Crown Lease sections. At the Northern section the available coal is being rapidly removed by pillar-extraction, and this section will be exhausted very shortly. The Crown Lease has been let on contract, and has produced a small output. At the Waro section operations have been suspended awaiting the installation of pumps.

Waikato Coalfield.

Ralph's Colliery.—Since the explosion in 1914 at this colliery a large sum of money has been expended on the restoration of the mine and improvement in the ventilating plant and system, and it is to be regretted that, owing to the unprofitable nature of the operations, after an active life of twenty-five years, the mine has now been closed. During this period about 275 acres of coal has been worked by bords, but owing to surface water and the indifferent cover the pillars have not been extracted. A total output of 1,368,236 tons had been obtained at the end of 1916.

Towards the close of operations the area of unworked coal had become restricted. To the northward the mine was bounded by the Taupiri Extended Colliery barrier; to the southward by faulting and erosion of the fireclay cover and by overlying water; to the northward the coal-seam outcropped under pumice sand which in places was waterlogged; to the southward under Lake Waahi the seam thinned. The remaining coal to the southward may be more advantageously worked from the Taupiri Extended Colliery. Before ceasing operations a strong rectangular reinforced-concrete dam was constructed in coal in the single heading connecting the Ralph's and Taupiri West shafts, at a point about 39 chains north-east from Taupiri West shaft; this dam should effectively isolate the workings of Ralph's Colliery from the unworked coal area under Lake Waahi, which is necessary, as falls of cover in Ralph's Colliery have been frequent and have required constant attention; now this attention has ceased, it is therefore only a question of time when the mine-workings will become connected with the River Waikato or its ramifications, and permanent flooding of the workings will result.

Taupiri Extended Colliery.—At this, the most productive colliery of the North Island, there has been a considerable decline in output, possibly owing to shortage of hewers. The mine-workings are now being carried on at a distance of about a mile to the north and west of the shafts and to the dip of the coal-seam; the cost of haulage has become considerable.

Towards the end of the year the seventeen dams referred to in my last annual report were completed. Instead of spherical dams of kauri as originally planned, Mr. James Bishop, the General Manager of the company, constructed rectangular dams of reinforced concrete, well rammed into approved sites excavated in sound brown coal. After the concrete had set, by means of perforated pipe built into the structure at its juncture with the coal-seam, Portland cement was forced at a pressure of about 300 lb. per square inch into any interstices which might exist. These dams have been constructed in accordance with the most modern principles, and in my opinion may be thoroughly relied upon to protect the mine in case of irruption of water in the zone now isolated by them. The ventilation of this colliery has attained a high degree of excellence, and is referred to in detail in my remarks on ventilation contained in this report.

By the Taupiri Coal-mines (Limited), the owners of the Extended and Ralph's Collieries, a new mine is being laid down at Awaroa, on the foothills, about 70 chains to the south of the Huntly to Pukemiro Railway, and at a distance of about six miles from Huntly. An extensive area of brown coal has been proved by outcrops and drilling, the coal-seam varying between 7 ft. and 14 ft. in thickness. A short branch railway line and sidings to connect the proposed mine with the Government railways is being constructed; other preliminary works are also being carried out. Mining operations on this coal area, being on elevated ground, will not be inconvenienced by surface water, as experienced at the other collieries of this company, and pillars may therefore be extracted.

At *Waipa Colliery* the output has declined. Underground development has proved a formidable north and south fault with an upthrow of 160 ft. to the west, at which the mine-workings in the two principal adit sections are now standing, but by means of an inclined surface tramway and short stone drive the coal behind the fault will be worked.

Pukemiro Colliery has considerably increased its annual output. At this colliery the surface arrangements and method of mining adopted are up to date both as regards economy and safety. A new section is being developed across the valley where there is evidence of the existence of a considerable area of unfaulted ground.

Buller Coalfield.

Coalbrookdale Colliery (Denniston).—The annual output continues to decline as the distance of haulage increases, in addition to which shortage of miners has contributed to the decrease. The principal operations are being carried out in the Cascade dip and No. 8 sections, where the