

Buller Coalfield.

Denniston Collieries.—Large areas of coal continue to be developed in the Wareatea and Ironbridge sections, and there yet remains coal for many years' successful operations. The endless-rope haulage system, both surface and underground, is very extensive, and as operations are proceeding eastward the distances become greater. The tramways now extend for several miles. Owing to proximity to the surface and numerous holings thereto, inflammable gas is seldom found in these mines.

Millerton Colliery.—In the Mine Creek section the Mangatini fault has been reached by some of the workings, but in a westerly direction a large area of unworked country exists. From the Mangatini section excellent coal is being won. A considerable proportion of the coal at this mine, although friable and soft, commands a ready sale for steam-production. The output from this mine during 1914 was the highest in the Dominion, 352,071 tons being produced. The haulage and travelling roads, also the ventilation and general management of this colliery from a safety standpoint, are very satisfactory. Inflammable gas has seldom been found.

At the *Westport-Stockton Colliery* the newly opened eastern section has been connected to the general haulage system by an electric tramway. Mining operations have reached a fault, which is being driven through. Numerous boreholes and some outcrops indicate a considerable area of coal at the other side of the fault. The older sections of the principal mine, the B, C, and D tunnels, are approaching exhaustion.

Grey Coalfield.

At the *Liverpool State Colliery*, No. 1 or Top Mine, boring operations have proved the existence of the Morgan seam—a lower seam of about 17 ft. average thickness and superior quality, extending over a proved area of about 130 acres from the forks of the Seven-mile Creek in a north-easterly direction. This seam was successfully correlated by Mr. P. G. Morgan, Director of Geological Survey, under whose advice the boring was carried out. In Geological Bulletin No. 13 the seam is described as "A" seam; it has since been named the "Morgan" seam. Immediate steps are being taken to develop the upper portion of this area by a short cross-measures drift from the main level of the Liverpool No. 1 Mine. The greater portion of the output from this colliery has hitherto been obtained from the No. 3 or Rewanui section, situated near the coal-bin and screens, where an upper seam is being profitably worked.

Owing to the discovery of a small quantity of inflammable gas, safety-lamps have recently been installed in this mine, and only permitted explosives are now used.

Point Elizabeth State Colliery (Runanga).—This mine is becoming rapidly exhausted, mining operations being chiefly confined to pillar-extraction. During the year underground fires occurred by the coal heating in both sections of the mine. These were successfully sealed off. Safety-lamps and permitted explosives are also used at this colliery. More dry coaldust exists in this mine than is advisable. The ventilation at all the State collieries is excellent, and the management, from a safety standpoint, is satisfactory.

At *Blackball Colliery* three sections are being worked on the panel system, and at two of these, which are to the dip, development has been retarded by influx of water. To overcome this two electrically driven turbine pumps have been installed, having a capacity of 250 g.p.m. against a head of 230 ft., and 360 g.p.m. against a head of 400 ft. Owing to the somewhat unrestricted use of explosives in this mine, and, to a lesser degree perhaps, from heating of the coal, the mine-air is frequently found to contain more smoke than is agreeable. Analysis, however, has not proved it to contain noxious gas in proportion likely to be injurious to health.

At the *Paparoa Colliery* the No. 2 seam is being extended in a north-west direction. The coal, although friable, is superior for steam, gas, and coke production. The surface arrangements and haulage system are not excelled by those at any mine in the Dominion. Safety-lamps are here used, gas being occasionally found. More coaldust occurs in the mine than is advisable. The ventilation, timbering, and roadways I found to be excellent.

Otago Coalfield.

Kaitangata Colliery (New Zealand Coal and Oil Company, Limited).—Owing to the prevalence of mine-fires and inflammable gas this is a mine which requires very careful supervision. The coal-seam is worked on the panel system, and substantial log and sand stoppings are used for sealing off the heated sections. With a falling barometer gas which has accumulated in lodgments in goafs and above falls is given off, and finds its way into the workings, and is therefore a source of danger. The capacity of the fan is about 30,530 cubic feet per minute, of which 16,191 cubic feet, or 53.3 per cent., is effective in the Mundy's dip and main-seam ventilating districts. On the occasion of my inspections of this mine the barometric pressure was normal, and I found no trace of gas at the faces with a safety-lamp; samples of return air, however, taken by me at the upcast shaft upon analysis were found to contain 0.38 per cent. of methane, equivalent to a production in the mine of 116 cubic feet of CH₄ per minute. Safety-lamps only are used in this mine, also permitted explosives. More dry coaldust exists in this mine than is safe under the conditions. I believe the management to be impressed with the necessity for caution.

At the same company's Kaitangata No. 2 mine the same condition exists, but emissions of gas have not been so frequent, and the return air contains less fire-damp. Ventilation is induced by a Sirocco fan of about 20,000 cubic feet per minute capacity.

At the *Castle Hill Colliery*, also the property of the New Zealand Coal and Oil Company, where but little work is at present done, the ventilation by furnace proving altogether inadequate, a Sirocco fan has been ordered.

I have, &c.,

FRANK REED,

Inspecting Engineer and Chief Inspector of Coal-mines.