

the pumps are too small, and with the corrosive acids in the water they soon perish, and it has been found to be impossible, with the present appliances, to extend the main dip heading. The pumps are steam-driven, and, through the steam-pipe lines being in the intake airway, the air along the drive is saturated with moisture and at a disagreeably high temperature. In view of the applicability of compressed air and electricity to pumps and hauling-engines in mines, I think steps should be taken to prevent the use of steam in coal-mine workings. The coal being worked is pillar coal, and as a result heavy falls of roof rock occur after mining, and the result is more water to pump. With the small output of coal the result financially must be on the wrong side. I found the mine worked carefully and the ventilation satisfactory.

Accidents.

It is pleasing to record that no fatal accidents occurred in my inspection district during the year 1916.

Only four accidents which may be classed as serious occurred during 1916. On the 12th June a miner named Charles Westfield, working in the Waipa Colliery, received a broken leg through a fall of roof rock. H. Muir was also severely bruised as a result of the same fall, and was off work for thirty-eight days. On the 13th September a man named William Grant, employed in the Taupiri Extended Mine as a lamp-relihter, was struck by a runaway truck on the main haulage-way and received rather severe injuries. On the 14th December a clipper names James Gibson, employed in the Taupiri Extended Mine, was crushed between two full skips on the main haulage-road, receiving severe crush wounds about the shoulders and body.

WEST COAST INSPECTION DISTRICT. (Mr. JAMES NEWTON, Inspector.)

New Zealand State Coal-mines.

Liverpool Colliery.—No. 1 Mine: Development in a north-easterly direction has proceeded during the year in the area lying to the east of the Seven-mile Creek. The seam is gradually thinning in the east winning-places, whilst to the west it outcrops into the Seven-mile Creek escarpment. The coal has somewhat improved in hardness going north. On the west side of Seven-mile Creek output has to be won from pillar-extraction, owing to the seam being confined to a narrow strip proceeding north, together with the fact that it thins to an unpayable thickness going west.

The Morgan Seam: This seam was reached by a cross-measure drift approximately 9 chains long. Very little development has taken place during the year. The seam, which is a thick one, is exceedingly friable, and on the eastern side of the drift is split by a thick band of stone. Safety-lamps for lighting purposes have been installed to replace naked lights owing to a trace of fire-damp having been met with. Blasting is done with permitted explosives.

No. 3A Mine: This area is proving disappointing. The seam, as it is being driven upon, is thinning considerably, and unless a change takes place will soon have thinned to such an extent as to be unprofitable. The coal is of good quality and medium hard, and is covered by an excellent hard sandstone roof.

No. 3 Mine: This mine has proved itself to be the best area opened out in the Liverpool Colliery, and at present is producing good hard coal. There is evidence, however, that this portion will in the near future be somewhat crippled by faultings and thinning. The area is cut into two separate workings by two closely adjoining faults running almost due east and west. These have been pierced and a considerable area opened on the north side; the western level, however, is limited in distance by a fault cutting north-east, and probably is a branch of the previous faults mentioned, and should this fault live it will gradually cut all winning-heading to the rise. The eastern workings in this area are in low coal.

Two new Sirocco fans have been installed during the year, one at No. 1 and the other at No. 3 Mine. Each fan is capable of producing more than sufficient ventilation to efficiently keep the air clear of noxious gases and in a healthy condition. No. 1 fan is electrically driven; No. 3 is steam-driven. One bathhouse has been completed and another is under construction. The workmen appreciate and make use of them almost to the fullest extent.

Point Elizabeth Colliery.—The output from both sections, Nos. 1 and 2, has been won exclusively from pillar-extraction, and, excluding the area that has been sealed owing to fire, the percentage of coal won has been satisfactory. The fire area has not given a great deal of trouble beyond the fact that it has been found impossible to win the few pillars sealed off. This area was opened some few months back, but owing to excessive heat it had to be again sealed up. The life of this colliery cannot, I think, be prolonged more than a year.

No fatalities have occurred at the State collieries during the year under review.

The output from Liverpool Colliery shows an increase compared with previous year of 57,465 tons, and Point Elizabeth an increase of 11,290 tons.

Other Mines.

Paparoa Colliery.—Development, which has mostly been in a westerly, north, and north-easterly direction, has now almost ceased, the coal having almost wholly given place to dirt going north-east, and outcropped going west; the coal has shown no improvement during the year, and remains soft and friable. A commencement to win pillars back from the escarpment will be necessary shortly in order to obtain an output. A block of coal lying to the south-east has yet to be exploited.

No fatalities have occurred during the year.