

met in March, therefore little or no development work has been done. The coal in these seams is of excellent quality, and is suitable for all general purposes, such as gasmaking, steam-raising, also black-smith and household.

The following is a copy of the analysis of the Morgan seam: Fixed carbon, 59.31 per cent.; volatile hydrocarbons, 37.33 per cent.; water lost at 100° C., 0.66 per cent.; ash, 2.71 per cent. sulphur, 0.33 per cent.; Calorific value: Calories, per gramme, 8,370; British thermal units, per pound, 15.066; pounds water evaporated at 212° F. per pound of coal, 15.6.

*No. 3 Mine.*—During the year an average of six pairs of miners were employed on the work of pillar-extraction. Although the number of miners was limited to six pairs, the daily output on some occasions was 100 tons.

*No. 3 Extended.*—During the early part of the year a little development work was carried out in the east and west levels, but owing to the seam pinching, and the intrusion of stone bands, they had to be stopped. The bulk of the output from this mine was therefore obtained from pillar-extraction.

*No. 4 Mine.*—This mine is adjacent to the main haulage-road that leads from the middle brake to the No. 2 mine. Although all the coal from this mine is not won that could have been, operations were suspended in January last. The management deemed it advisable not to extract any more of the pillars in the meantime, as there was a liability of damaging the overlying cliff and therefore endangering the haulage-road.

*Development Work.*—For some considerable time the principal work carried out under this head was confined to the construction of two low-level adits to connect with the Anderson, Kimbell, and Morgan Seams (No. 2 mine). To connect with the latter seam the estimated distance to be driven was 56 chains, and it is pleasing to report that the estimate was fairly correct, for the seam was met at 55 chains 45 feet. This work is now completed, and it would not be out of place to state that in the course of driving these adits inflammable gas was given off on several occasions in such quantities that operations had to be stopped for days at a time until it drained off. For the last 36 chains of driving it was imperative that only permitted explosives should be used for blasting purposes, and this made the work more costly than if gelignite was used. The power that was used for the driving of these adits will now be used for hauling and pumping out of the Anderson seam.

*Accidents.*—There were several minor accidents during the year, and it is regrettable to report that there were two fatal accidents. In connection with the latter, special reports were forwarded.

*Surface Works.*—The plant and machinery in and about the mine has been maintained in efficient working-order, and during the year the following buildings have been erected: A change and bath house near the middle brake, capable of accommodating 128 men; also a lamp-room for the electric safety-lamps. In the change and bath house there are sixteen cabinets fitted with hot and cold showers; there are also two cabinets containing washbasins only. The floor of the building is constructed of reinforced concrete, and likewise the main walls and those of the cabinets to a height of 7 ft., and finished off with a plastered surface. Above the concrete walls the building is erected in wood, roofed with corrugated iron, and the inner walls and ceilings lined with matchlining. The building is heated by five lines of 4 in. steam-pipes, the steam being supplied from the boilers by a ½-in.-pipe line. The latter is fitted on to the end of the 4 in. pipes. The escape steam from the other end of the 4 in. pipes is returned into two 400-gallon tanks to heat the water for the showers. This change and bath house is considered one of the most up-to-date in the Dominion, and it is built in such a way that it can be easily extended if required. The new electric-lamp room is built entirely of concrete, and is fitted with all necessary equipment for dealing with the electric lamps.

In addition to the buildings herein referred to, a concrete retaining-wall, approximately 200 ft. by 12 ft. high and 2 ft. thick, has been built to prevent the Seven-mile Creek water scouring the foundations of the No. 2 viaduct. A large number of concrete piers have also been built preparatory to erecting a new viaduct.

At the present time there is a temporary bridge across the Seven-mile Creek, and arrangements are being made to construct a new one of iron. The new bridge will be approximately 600 ft. long, and in the centre it will be about 40 ft. higher than the present one. When completed, it is the management's intention to convey the workmen to and from their work from the middle brake to the end of the haulage-road in the No. 2 mine. The distance from the middle brake to the end of the haulage-road in the No. 2 mine is approximately one mile: it will therefore be seen that a great saving in travelling will be effected.

*Electric Safety-lamps.*—In my last annual report reference was made to a trial that was being carried out with several types of hand and cap electric safety-lamps with a view of determining which was the best type to adopt. After a careful and lengthy trial it was the unanimous opinion of all concerned that the Pearson N.I.F.E. hand electric safety-lamp was undoubtedly the best of the hand-lamps, for many reasons. Of the cap lamps, the composite one, which is a combination of the Pearson N.I.F.E. and Oldham, was the best. This lamp, however, is not yet on the permitted list, but it is understood that arrangements have been made by the makers to have this lamp submitted for test. As a result of the trial herein referred to, 100 Pearson N.I.F.E. hand electric lamps were purchased, together with charging-stands and other necessary equipment. These lamps are in daily use, and give entire satisfaction. If anything, the light is too bright, and is hard on the eyes, particularly when men are walking behind one another travelling in and out of the mine. To overcome this difficulty arrangements will be made to obtain tinted outer glasses, and use them instead of the plain ones as at present. An order was also placed for fifty composite cap-lamps, but, as herein stated, they had to be submitted for testing purposes, and so far they have not arrived.

*Co-operative Contracts.*—In October last a party of twenty-one employees (with the sanction of the union) came to terms with the management for working the No. 3 mine extension on the co-operative system. The contract included all underground operations (excepting shot-firing and supervision) and necessary labour required on the surface to deliver the coal into the storage bin, the Department