

Inspector of Mines' Office, Westport, 16th February, 1900.

[*Subject.*—Inspection of the Bridge Section, Cardiff Mine.]

SIR,—

I have the honour to report that on the 14th instant, in company of Mr. Alexander Mitchel, underviewer, I made a careful inspection of all levels, headings, bords, and pillared ground, and found them safe and in satisfactory condition. There is no change in the workings since work ceased. Falls were not met with in any part of the mine.

The sealing-down stoppings are thoroughly tight, and as far as practicable everything is done in accordance with safety to life and property. Smoke was oozing through the grass on the cliff that rises from Chasm Creek.

I intend to partly flood the workings, but you will hear further on this in a few days.

I have, &c.,

R. TENNENT, Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

Mr. Elliott,—

Inspector of Mines' Office, Westport, 23rd February, 1900.

PLEASE find enclosed herewith report on the fire at the Cardiff Mine. Copy of the colliery plan of mine workings will be forwarded next mail.

R. TENNENT.

Inspector of Mines' Office, Westport, 19th February, 1900.

[*Subject.*—The first working and the precautions taken against the occurrence of spontaneous ignition in the Westport Cardiff Coal Company's Mine, situated at Seddonville.]

SIR,—

In compliance with your memorandum, No. 376, I have the honour to report as follows: The term "first working" generally includes all solid cutting, such as levels, headings, bords, &c., in the development and blocking-out the coalfield into pillars. From this class of work the coal gotten by the collier at the face or otherwise is filled into trucks and sent outside to be used for commercial purposes, so that refuse of any kind was unknown, neither was it allowed to remain in the working places. Further, the gross-weight system adopted at the colliery, by which the collier was paid on all coal gotten, prohibited accumulations of slack-coal being stored in any part of the mine; the miner being paid for slack equally as for round coal; also, the pyritical stone-bars that this coalfield was subject to were filled by the collier into trucks, and paid at the rate of 1s. per truck. Therefore, as the faces advanced the workings left behind were practically clear of refuse. This system of carrying on operations was strictly practical, economical, and served two purposes: Firstly, it was a strict precaution against spontaneous ignition occurring in accumulations of slack or other pyritical refuse; secondly, all parts of the mine are kept in proper condition for the removal of top coal or extraction of pillars, without inconvenience in filling the coal clean, as trade demanded.

Locality and extent of Fire.

From the practical examinations made by Mr. Dixon, mining-manager, Granity Creek Colliery, and myself, the seat of the fire is located in the Hannah Hector Block. As shown by attached plan, this block of coal is located between two main fault-lines, and formed the most valuable section of the coalfield. The developments comprise two main headings, No. 1 and 2 inclines. These headings were driven in a direct course from the main haulage-road towards the outcrop of Chasm Creek, and were the chief centres by which the coal was conveyed to the endless-rope haulage. Shortly after the extraction of pillars was commenced in No. 2 incline district, a "creep" was threatened which necessitated large quantities of timber to be built into the workings in the form of "chocks or pig-styes," in order to check or locate the creep. When, after the lapse of several months, the workings settled down, the removal of pillars was started again without further trouble. Thus the timber referred to was ultimately buried amongst the fallen *débris*. My object in pointing out this fact is that the timber may be considered a means from which spontaneous ignition may or may not have originated.

No. 1 incline was holed on the outcrop, and afterwards pillared very successfully, the roof falling in as the coal was removed.

In the extraction of thick coal-seam pillars, even by the most experienced colliers and under the most careful supervision, a large percentage of coal is lost and buried under the falling mass, which in many instances may be considered to give conditions favourable to spontaneous combustion, more especially when the coal is near the surface. In the fire-affected district the natural soft character of the coal, combined with the pressure from the overlying stratas, tended very much to lessen its value as a commercial product. Also the rapid spread and increase of the fire may be attributed to the very loose, dry, and dusty condition of the coal. As evidence of dust-explosions were experienced during the building of the intake permanent stopping, and at the old furnace-shaft pieces of charred wood were picked up from the ground that had been discharged through the shaft. From personal knowledge of the workings I may state that had the fire been detected in its earliest stage great difficulty would have been experienced to locate and seal off the affected district in order to save the main roadway, as the work would have required twelve permanent stoppings to be built, and under most unfavourable conditions, amongst the crushed pillars, where, had it been possible to accomplish, the fire would probably have broken out afresh at a future day.

Viewing the position from every standpoint, it was imperative to watch and study every condition of safety on behalf of the workmen. On this practical theory experience led me to decide