

▲ FURTHER REPORT ON THE STRATHBLANE COAL MINE
(ESPERANCE COAL MINING COY. N.L.)

Introduction

The Strathblane Mine was visited by the writer during March, 1927, and a report was written on 22nd March, and a supplementary one on the 24th March, 1927.

During the past twelve months mining work has continued on the Company's leases. The present report will deal with the work of the past year and will not include a repetition of the descriptions of the older workings, topography, geology, &c. The information in connection with the latter can be obtained from the previous reports already mentioned.

The Mine Workings -

Work during the past year has been performed in the northern part of the property.

This locality was described in the previous report as being on the Licence to Search Area (No. 161) and 20 chains north-west of the north-east corner of Lease 9747/M. From limited observations, it would appear that the workings are on Lease 9747/M as shown on the accompanying plan if it be assumed that the posted notice for 10311/M is in its correct position. If the posted notice is not in its correct position the workings may be situated on the applied for Lease 10311/M.

In March, 1927 the workings at this place consisted of a trench with a small open-cut on the south side of it showing 3 feet 7 inches of a coal seam. In addition, an adit had been started some 50 feet to the east and had been driven some 20 to 30 feet on a bearing of 235° . This adit was driven in the mudstones below the seam.

Since then a large dip-adit (about 12 feet by 5 feet) has been commenced from a point some 75 feet W.N.W. of the old adit. The dip-adit has been driven horizontally 52 feet on a bearing of 195° and then as a dip adit for 82 feet at a bearing of 240° the bottom band of coal being followed where present. An air shaft to the surface connects with the adit near the bend in the adit.

Equipment, &c.

The drainage of the mine is effected by a siphon to which a hand pump is connected for filling and starting purposes. The tram-line from the adit has been continued some 60 feet across the dump to the top of the coal shute. The trucks are at present hauled by a hand winch, but a power winch with vertical steam boiler and engine are being installed for haulage purposes. The chute includes sections of screens to separate the slack, and a small bin at the lower end. The tramway to Port Esperance connects with the bin while an inclined haulage enables plant &c. to be hauled to the mouth of the adit.

Transport Facilities

An old tramway has been repaired and connected with the mine workings. It is a wooden tramway, laid on closely spaced sleepers. The approximate course of it has been sketched on the plan as far as the crossing on the road. The grades are easy except the last half miles near the mine. The tram connects with a shipping place at the head of Port Esperance.

The Coal Seam -

Only one coal seam has been opened up in the recent workings.

The open cut or deep trench put in by J. Smith exposed up to 3 feet 7 inches of coal resting on white weathered mudstones. This coal therefore represents the bottom part of the seam.

No. 1 and No. 2 shafts were prospecting ones sunk by J. Smith. No. 1 shaft is stated to have been 18 feet deep and to have exposed the lower 3 foot band of coal, while No. 2 shaft is said to have been 21 feet deep and to have shown 7 feet of coal.

No. 1 shaft does not connect with the adit, but No. 2 shaft was included in the adit when the latter was being driven.

The air shaft was put in by Mr. Dawson and is said to have picked up the upper band of coal 4 feet thick.

The main adit picked up the outcrop of the lower band of coal and then eventually owing to the dip of the seam to the west-south-west, the whole of it was exposed in the adit and over the back thereof.

About 10 feet past the bend and after the adit became a dip one, the section of the right hand side was from top to bottom:-

4'0" Upper band of coal
 1'0" White mudstone
 5'0" Middle band of coal
 0'6" Soft white mudstone band
 3'0" Lower band of coal
 Fine sandstone or shale floor.

It is unfortunate that, from here to the face of the adit, the sides are timbered and more or less hidden from view by falls of mudstones &c., as the section of the seam was considerably altered during the next 60 to 70 ft.

From statements by Mr. Dawson and confirmed by such observations as could be made, the occurrence is as shown in the vertical section included on the accompanying plan. The general effect is, at first, an apparent thickening of the lower mudstone band, and the replacement by it of the middle band of coal. Further in the adit, the bottom seam apparently ends abruptly and the adit has been driven in white mudstones much altered by weathering. The upper band of coal continues while the above changes have taken place in the lower middle bands but near the face it dips steeply and "makes" onto the hard floor.

The occurrence is a very unusual and intricate one. The continuance of the hard floor at approximately the same dip and the continuity of the upper band of coal appear to eliminate the possibility of any faulting having occurred. A small fold is not probable although it is difficult otherwise to explain the steep dip of the upper band near the face. The explanation is probably to be sought in the alternations of sedimentation and denudation which occur during the formation of coal measures.

The following appear to be the most probable sequence of events, although it must be stated that further driving may reveal evidence which will cause modification thereof.

The fine sandstone or shale beds were laid down continuously over the section being discussed. Conditions changed and those favourable to the deposition of vegetable material &c. existed resulting in the formation of the lower band of coal continuously over the area. Conditions again altered, due probably to slight elevation of the land and a small stream flowed across the area and denuded part of the lower band of coal and corroded the floor of sandstone. This was followed by deposition of clay forming the mudstones continuously over the area. Denudation again occurred and removed the clay deposit over most of the area, but left a small ridge representing the body of mudstones shown in the section. The lower band of white mudstones were probably then formed followed by the middle coal band abutting against the eastern slope of the clay ridge. If the middle band was formed west of the ridge, it, together with some of the ridge, must have been removed by subsequent denudation. Then followed the deposition of the mudstone band between the middle and upper coal bands, continuously over the area. This was succeeded by the top band of coal continuously over the area.

The only difficulty in the above explanation is the steep dip of the upper coal band on the west side of the clay ridge, which would not likely be a result of natural sedimentation. If it were not for the hard floor, however, one would assume a small monoclinical fold. Further driving may reveal further evidence on this aspect of the problem.

Present position regarding the seam

At the face of the drive the upper band of coal had come down to the hard floor and had increased in thickness from its normal 4 feet to near 6 feet.

Little can be said as to what is likely to happen ahead of the face, but the obvious thing to do is to push the drive ahead and so get away from the effect of the clay ridge. The evidence revealed by the next 20 to 30 feet of driving may help in the elucidation of the problem. Further, it will, of course, show the thickness and nature of the seam to the west of the clay ridge.

Quality of the Coal

No samples were taken in view of the seam not being its normal section in the present workings.

Representative samples would be more advantageously taken when the adit has progressed further. This will give the seam in its more usual section and will give coal which has not been subjected to weathering as it has nearer the outcrop.

Coal has been proved to occur at a number of localities over a length of two miles in a general north and south direction on the Company's property. Two or three seams are present at the southern end and one or possibly two at the northern end. Correlation of seams is at present impossible.

A detailed geological survey could outline approximately the coal measures on the property. Even with this information available no estimates of reserves could be given on account of lack of data as to number and thickness of seams, and the detailed structure of the field.

Conclusions and Recommendations

The present workings have been designed to test the seam and open up the mine ready for the production of coal. It is unfortunate that the section of the seam has not been constant up till the present. It is fortunate that the variation occurred near the surface and before headings were designed and driven.

The dip adit should be driven further on the coal seam until it assumes a regular section again. Headings can be then driven according to requirements. The coal in this part of the mine would be better in quality in that it would have been less influenced by the action of weathering.

The above work will prove the coal seam in the immediate vicinity of the mine only. While the mine is being operated on a small scale, this developmental policy may be sufficient. The work is not however proving the ground to any distance beyond the working, and if a large production is contemplated, it would be highly desirable to prove the extension of the seams, their thickness, and the geological structure by prospecting and boring operations.

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