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TORBANHILL late MEUNNA COAL MINE

PREOLENNA

Lease No. 121P/M, Charted in the names of H. Barr and S.J.L. Carson

General Statement

The writer visited this property on 3rd January for the purpose of examining a coal seam exposed on the hillside on which a dip tunnel has been driven a distance of 81 feet.

The leasees having made application for assistance to further develop the seam to the extent of continuing the tunnel a total distance of 300 feet and developmental operations preparatory to productive work.

At various periods extending over many years officers of the Mines Department have examined and furnished reports on the coal field generally.

The latest publication of the Department is included in "The Coal Resources of Tasmania 1922" Chapter 18; contributed by Loftus Hills late Director of Geological Survey;, Geological Survey Bulletin No. 13 entitled "The Preolenna Coal Field and the Geology of the Wynyard District" dated 1913 also by Loftus Hills deals fully with the development, its general features and prospects.

Since the time of the former mentioned publication very little work of any description has been undertaken, consequently no additional informations concerning the value of the various coal seams is available.

Access to the field can be made either by road or railway from Wynyard, the distance being about 20 miles.

The present terminous of the road is at a point close to the Railway Line, from the former to the Torbanhill Mine workings a mile section of the road extension is under construction this terminates at a point approximately 20 chains from the entrance to tunnel.

In past years a good deal of attention was centred on the field by investors and a fair amount of developmental work undertaken. Small shipments of the coal was sent out for testing purposes and despite the fact that in some instances very favourable reports were received regarding the value of the coal for certain uses, activity on the field waned to almost complete extinction.

The cause of the temporary abandonement of the field is due primarily to the high sulphur content, precluding its use for steam raising purposes in the lump form.

The leasees state that they have a local market for domestic purposes which will absorb a fair average tonage annually.

Mine Workings

The workings visited consist of a dip tunnel driven a distance of 81 feet on a seam of coal and a

small opening on the outcrop of the same seam a few chains to the south of tunnel.

The dip of the seam is 14 degrees which is less inclination than the average of the seams in the district.

A small rotary pump is fitted up for hand work to cope with a slight seepage of water which accumulates in the tunnel. As the work of driving proceeds it is probable an increase of the quantity of water now making will occur. A few chains south of tunnel a quantity of coal has been taken from the outcrop and sold for domestic use.

The coal of this seam excepting for contamination by iron pyrites is remarkably free of impurities. At the tunnel entrance it is 20 inches thick at end of tunnel where work has been discontinued it is 22 inches thick. The roof and floor consist of firmly consolidated sandstone.

The solid roof and floor are a very favourable feature from a mining point of view owing to the comparatively small quantity of timber needed.

Mining Costs

The leassees estimate the cost of grassing the coal from the seam examined at 10/- per ton.

That figure would include breaking and delivery to mouth of tunnel to which must be added interest on capital outlay depreciation of plant and general maintenance. The relative cost per ton would depend upon output, which in turn would influence transportation costs. Up to a point transportation costs would vary inversely to the quantity sent out.

As there is much work yet to be done in the way of developing the seam the question of hewing costs cannot be accurately estimated. The seam from portal of tunnel to the distance driven (81 feet) - has gradually shown an increase in thickness, any variation in its thickness will have a marked influence on the hewing cost. It may here be recorded that well known authorities on the geology of coal state that cannel coal is not constant in its occurrence and is often found in the form of lenticular bands and for that reason it would not be wise to estimate quantities without development either by tunnels or boreholes over a fairly wide area.

Impurities in the Coal

The only objectional constituent in the coal is sulphur which is present in association with iron as iron pyrites. The amount present is roughly 5.87% vide "Coal Resources of Tasmania page 30. The pyrites occur in film like layers on the clear faces of the coal and in the form of small veins of crystal pyrite. Washing reduces the quantity present but to render it effective crushing will be necessary prior to washing. The size to which the coal should be crushed will depend upon the total quantity of sulphur it is desired to eliminate which can be found but actual experimental tests.

The above figure represent the average total sulphur content of the coal of the district. The seam examined may contain a lesser quantity than the average, this can be found by taking regular samples for analyses at frequent intervals during developmental operations.

The general average quantity of sulphur in Tasmanian coal is about ½ per cent.

In a series of exhaustive tests carried out on Tasmanian coals at the Purified Coal and Coke Company's coal-washing plant at Jesmond, near Newcastle, New Sough Wales under the supervision of H.G.W.Keid, late assistant Government Geologist, much valuable information was obtained respecting the efficiency of washing to reduce sulphur and ash contents of Preolenna coal.

In the matter of elimination of sulphur it was reduced from 5.87% to 3.38% equal to 42.4%. The ash content was reduced from 13.72% to 9.68% or 29.5%. The proportionate reduction of the sulphur was much greater than in the case of the ash content. The amount of the latter in Preolenna coal is less than that of any of the East Coast beds.

In making these tests of coal was crushed to pass through 1½ inch ring. It was estimated by the manager of the above mentioned works that the cost of crushing the coal would amount to thirteen pence per ton.

The estimated cost of a coal washing plant to deal with 20 tons per hour is £640.

The foregoing data goes to show that a relatively high percentage of sulphur is left in the coal after washing even when reduced to a size that precludes its use for steam boilers, it would also be rather small size for general domestic purposes.

Possible uses for Preolenna Coal

1. Domestic Purposes

The lessees state that a ready sale can be obtained locally for practically all the coal they propose to produce from the mine. To send it further afield it would come into competition with coal from the East Coast Mines.

2. Distillation for oil

To utilise the coal for oil production large quantities would be necessary, which would require a heavy capital outlay both in developmental operations, by boring and tunnelling in order to make provision for a regular output for distillation purposes.

The chief factors to be considered are:-

1. Quantity of coal available.

2. Cost of Hewing.

3. Capital expenditure necessary to develop the seams and provide retorting plant.

4. Working costs - retorting and refining

Before anything in the nature of utilising the coal for oil production on a commercial scale it would be necessary to carry out a series of exhaustive tests in order to determine the most suitable type of retort for the work.

Experimental work of the kind is essential.. The residue of the retorted-coal consists of coke, which would no doubt be of great value to use as pulverised fuel.

Cement Making

The Preolenna coal would make an excellent fuel in the manufacture of cement providing the high sulphur content would not act deleteriously. In Brazil coal carrying as high as 5 per cent sulphur is successfully used in the pulverised form for steam raising purposes in locomotive engines, with specially constructed fire boxes.

Recent experiments made of the steam raising qualities of pulverised coal have demonstrated that it is more economical than oil fuel.

Opportunities exist in Tasmania for testing the coal for cement making minimum of 200 tons being necessary for the experiment.

Conclusions

Briefly the position of coal mining at Preolenna is that at present it is dormant. The field is well served by both railway and road communication within a short distance of thriving towns and shipping ports. Some reason must be assigned to the total inactivity of mining on the field.

The coal is of very high grade quality excepting for the presence of an unusually high percentage of sulphur, which precludes its use as a fuel for steam raising purposes under ordinary conditions. It is stated to be quite satisfactory for domestic use. It cannot be used as "smithy" coal.

There are good possibilities for its use in pulverised form when that method of steam raising is more generally adopted.

The other chief factor against the active development of the field is the comparatively small size of the seams and which must add considerably to the cost of hewing compared to the thickness of the beds occurring in other parts of the island.

Before incurring expenditure in developing the seams to the productive stage an assured market for the coal in quantity sufficient to allow a fair margin of profit over hewing transport and distribution costs, should be forthcoming.

Important experiments are being made in Great Britain in the use of pulverised coal, by some authorities it is said to be beyond the experimental stage, and the day is near when oil in sips will be challenged by pulverised residual coal.

"Residual" coal is the product remaining after the volatile hydro-carbous and oils have been retorted from the coal.

The question of mining and marketing the Preolenna coal will depend entirely upon the commercial uses to which it can be applied, cost of hewing etc. It is of undoubtedly high potential value. It now remains for a com lete investiagion to be make for its utilisation in one or more of the avenues suggested.

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Mines Department,
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