

GEOPHYSICAL METHODS OF PROSPECTING

Discussion between Mr. McIntosh Reid, Director of Mines, Tasmania and Mr. W.J. Rose on behalf of Mr. H.W. Gepp.

The information before us consists of:-

1. Report to the Commission by A.S. Fitzpatrick (Anglo-Persian Oil Company).
2. Various discussions and correspondence over a long period between Mr. Reid and Elbof Co.
3. Information collected by correspondence by Mr. H.S. Elford of Electrolytic Zinc Co.

It is agreed that geophysical prospecting to be successful must take advantage of all known methods, namely magnetic, electrical, gravitational, Seismic and Acoustic.

Both A.P.O. (No. 1 above) and Elbof offer this.

The proposals being considered by the Tasmanian Government and those before the Commission both aim at the eventual end of a Government controlled and Government employed instrumentality. The Tasmanian Government has no objection to and subject to certain safeguards to be mentioned later, would prefer this instrumentality to be under the Commonwealth. In default of prompt Commonwealth action they are, however, prepared to go ahead independently.

Mr. Reid has been assured that action can now be taken by the Commonwealth as promptly as by the Tasmanian Government. Thus we are in agreement on the 2 points of

1. Prompt commencement.
2. The end to be aimed at eventually.

The matters to be decided are -

1. The method of training the personnel.
2. The question of preferential employment in Tasmania.

We are offered the services of the A.P.O. Co., to train Australians at a cost presumably of the bare expenses incurred by the A.P.O. in doing so.

The Elbof Co. have made an offer - open till April - to do this for a sum of £6350 for 6 months. In both cases we would have to bear the expenses of travelling and living allowances for instructors and those undergoing instruction. Further, in both cases, we would have to purchase our own instruments which cost is estimated at £5000. It would thus appear that A.P.O. assistance would be cheaper to the extent of several thousands of pounds.

The A.P.O. can offer the results of several years of intensive study in prospecting for oil. Elbof's claim that they can offer the same. The A.P.O. cannot offer the results of any experience of prospecting for ore. Elbof's claim that they can offer wide experience in this field.

Thus assuming that Elbof's claims are well founded, on which point Mr. Reid is quite confident, it would appear that there is a possibility that the extra expenditure involved by Elbof would be profitable as giving a more generally trained team at the end of the instructional period.

Other Methods:

In addition to A.P.O. and Elbof there are the Swedish methods exploited by the Electrical Prospecting Co., Stockholm, Sweden (Sundberg process). This method is purely electrical and is being used by R.H. Stevens at Rhodesia Broken Hill.

There is also a French process of Schlumberger being applied with, it is claimed, considerable success in Canada and U.S.A. by Mr. Sherwin F. Kelly. This also is purely electrical.

These two methods do not offer the general scope of A.P.O. or Elbof, offering merely alternative electrical methods to that included in the Elbof scheme.

The ideal to be aimed at seems to be to obtain as far as possible all the experience of all these organizations. The actual apparatus employed by different concerns is a minor consideration in comparison with the experience gained by their staffs in this very new development of science.

The question of preferential Treatment to Tasmania:

If this development were wholly financed by the Commonwealth, Tasmania could claim no preferential treatment over any other part of the Commonwealth except on the ground of the undertaking of the Commonwealth to assist in her financial rehabilitation. Assuming that the amount of financial aid the Commonwealth can render is limited, it then becomes a question as to whether the cost of immediately proceeding with geophysical prospecting in Tasmania apart from a Commonwealth scheme, could not be more profitably devoted to agriculture, forestry, or a geological survey (which is a necessary preliminary to geophysical prospecting in any case.) This is a matter on which we are not in a position to finalize our opinions at the moment but both agree that it is open to argument.

The Tasmanian Government has however, a trust fund which must be devoted to aid mining particularly in the neighbourhood of Zeehan. The amendment of the Act to allow of this sum being used for geophysical prospecting is contemplated. In addition to this, the Mt. Lyell Co. have already approached the Government offering to co-operate in the cost of developing this method of prospecting. They are naturally interested only in prospecting in Tasmania. The Electrolytic Zinc Co., is also interested in this matter and in view of the example of the Mt. Lyell Co. might also be induced to contribute.

Conclusions:

1. The development of geophysical prospecting will be best carried out by the Commonwealth.
2. It is desirable to take advantage of the experience of all the concerns engaged in this field.
3. The Tasmanian Government with the assistance of the mining companies is in a financial position to attack the problem independently. No doubt either of the mining companies above referred to are in a position to go ahead quite independently.
4. The best compromise would be for the Commonwealth to commence training one team with the assistance of A.P.O. in Western Australia or wherever else they might decide, and for the Commonwealth also to commence training another team in Tasmania with the assistance of the Elbof Co. Towards the expense of this second party Tasmania would contribute the money which she has in hand for this purpose, and the Mining Companies would also make their contribution. On the other hand, the Commonwealth would agree that this team would not be removed from Tasmania for work elsewhere until a certain specified amount of work has been done in that State. Complete interchange of experiences between the two teams would be necessary.
5. It is considered that, when the training of these teams has advanced sufficiently far, officers of each of the State Mining Departments should be given a general training in the methods to insure the most efficient use of these methods by the Departments concerned

The provision of a second team in Tasmania is, therefore, recommended conditionally on substantial financial help being rendered by the Mining Companies. Failing this, it will be necessary to fully discuss the question as to whether the Commonwealth aid could best be rendered through this medium or in some other direction. It must be remembered that even if this work were not immediately commenced in Tasmania it would be so commenced in the course of time. This delay, however, might amount to several years whereas the possibility of quick relief from financial difficulties by this means is its main attraction in the eyes of the Government of Tasmania.

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Department of Mines,
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