Prysor South - Project 1688

Introduction

This report, together with the reports on the localised areas of Cwm Cynval and Prince Edward completes the accumulation of all the prospecting data for the project 1688.

Prospecting rights were taken on five farms, four of which form on large block (See Fig 1), the fifth is broken into three separate units. These farms adjoin the upland area known as the Llechwedd Gain common which was partially reconnaisance soil surveyed, although it was not under licence to Noranda.

The area consists of lightly wooded farm land in the lower vallies, which rapidly give way to low bare, gently undulating hills which continue shouthwards across the Llecwedd Gain. The western boundary is a little more rugged due to a series of low scarps and crags fromed by a doleritic intrusions. The upland areas as well as some of the arable land is given over to sheep farming.

Mineral Rights

Plas Capten (116/48) Owner. William R. Williams	160 Acres.
Ysgwern (116/47) Gerald Robert Williams	186 Acres.
Bod-y-fuddau (116/10) Robert Gareth Williams	500 Acres?
Bronysgellog. (Fronsgellog) (116/9)	550 Acres?
Nant fudr (116/11)	600 Acres?

The acrerages of the last three farms are in doubt since some of the owners included their share of the Gain common which is not partioned and therefore has non-definable boundaries.

Adjacent owners of rights, not subject to agreements at present are the Forestery Commission and the Llechwedd Gain Consortion (Farmers Union of Wales-Dolgellau).

Previous Work

The area was subject to a detailed stream sediment survey by R. Rastall of Noranda in late 1969 which was designed to locate the source of anomalous copper, lead and zinc detected in the Huntings reconnaisance stream survey carried out earlier in the year.

In early 1970, four lines of I.P. measurements were carried out over farms of Bod-y-fuddau and Bronysgellog which were the two most westerly farms under agreement at that time.

The results of the I.P. Survey indicated that high chargeabilities and low resistivities did exist but information was insufficient to locate the nature or control of the I.P. anomalies.

Present Work

In July and September 1971 reconnaisance soil sampling was carried out on lines 1000ft apart and at 100ft seperation, over several thousand acres of this area. See Figs 2,3,and 4. The five farms previously mentioned were sampled together with the farms between Bod-y-fuddau and Bronysgellog as well as much of the Llechwedd Gain Common.

In late September, the unexpected arrival of an I.P. crew resulted in an I.P. grid being laid out in the upper Gain River area. See Fig 5. At the time this area was the only anomalous area that had emerged.

As more results became available, it became apparent that Bod-y-fuddau farm was the source of much of the anomalous copper and an I.P. grid was set out over this farm. Detail soil sampling was carried out over the same grid as well as a geomagnetic survey. Magnetic anomalies were located on the north west and south east extremities of the grid. The south west anomalous area on the borders of Plas Capten and Ysgwern farm was investigated by further I.P. and magnetic work since this area also showed sporadic high copper values. The I.P. and magnetic anomalies did not appear to be coincident.

A small section of the magnetic anomaly was profile soil sampled by means of 16 shallow pits to bedrock See Fig. 11.

Results of the Geochemical Survey. See Figs 2,3,& 4.

Copper

One,area of the anomalous copper is concentrated in the zone between the three faults (Fig 8) which run approximately north south across Bronysgellog. Some anomalous copper is due to the small trial at SH 729-345 as well as waste quartz/ chalcopyrite material being used in the walls. Southwards there is some indication of a slight increase in copper mineralisation towards the fault junction on the Llechwedd Gain. The size and extent of the anomalous copper does not presuppose extensive disseminated mineralisation. The other anomalous copper area lies on Plas Capten farm and seems to be closely related the magnetic anomaly. The profile sampling see Fig 11, shows a downwards increase in copper levels only in Pit 4. It is likely that the magnetic anomaly is due to an increase in pyrrhotite in the dolerites. The copper mineralisation is possibly a weak dissemination marginal to the dolerites, as has been found in other areas in this region.

Lead

The lead is mainly confined to the Upper Gain river area to the south of a base metal trial. This area is rather boggy and since detail soil sampling has not been carried out it is difficult to detect the true trend of this zone. The I.P. (Fig 6 picks out an interesting lineation - Line 16S/10E, Line 24S/5E, Line 32S/00 and line 40S/7W. This high chargeability peak merges into the back ground chargeability to the north and south, but the lineation does appear to head for the trial with rich zinc and minor galena ore at SH.781-351 (See Fig 5) The adit appears to be driven south east though. It is now flooded and the evidence is that it is driven along the margin of a dolerite.

Zinc

Zinc is suprisingly low in the region of the lead anomaly, (See Above), especially in view of the fact that the soils are very organic rich.

The zinc anomalies appear to be sporadic and isolated and do not follow the other metals at all closely. There appears to be some co-relation between the dolerites and the anomalous zinc but better mapping of this poorly mapped area is required before this could be certain.

Results of the Geophysical Work

Induced Potential Measurement

The high chargeability zones can usually be related to the lithology. The Clogau shales, being pyritic, give a very strong I.P. effect other pyritics horizons exist throughout the sucession and these can be identified by a study of the I.P. curves. It is generally impossible to pick out narrow veins, even if some disseminated mineralisation exists, in this environment. Some lineations do however show through - see above under Geochem (lead).

The area between the faults showed a poor response except in the region of Ysgwern farm. This I.P. anomaly is likely to be due to a pyritic horizon in the Vigra flags although the area could be a little more interesting since copper is also anomalous.

It appears that the Wenner array is as useful as the Gradient array, but without more detailed geological information it is difficult to locate significant factors. Some mapping and drilling of the Afon Gain Uchaf (Upper Gain River) area could provide data for a far more detailed analysis of results.

Geomagnetic Survey

The magnetic work shows that a number of thin near surface, magnetic bodies exist in the Plas Capten farm area. Although few exposures exist no mineralisation to account for them was seen in hand specimens. It is thought that pyrrhotite in the dolerites could be the cause, although marginal hydrothermal magnetite is not to be ruled out. The bodies are clearly discontinous as is typical of hydro-thermal mineralisation in this region. There is a possibility that slight copper mineralisation could be associated with the magnetic bodies. A few

short drill holes could provide valuable data from this area.

In general it is found that the dolerites give a slight rise in back ground of about 200 gamma after the magnetic anomalies were located and seen to be mainly confined to the Clogau shales, some traverses were carried out in order to investigate this apparent relationship. The position of the traverses are shown on Fig 9 and the profiles are shown plotted on Fig 10. The traverses show that the Clogau shows more anomalies than other horizons but the anomalies are not confined to it. This horizon has always been known to control the gold mineralisation and the anomalies could be significant from this respect.

It is seen that some slight magnetic disturbance exists in the region of the fault junction (traverse 3). The fault junction against the dolerite was traversed by five short lines and the slight rise that was detected could be due to a broader deep feature.

Conclusion

It is felt that this are is unlikely to yield high tonnages of ore but it is possible that some small rich deposits could be found marginal to dolerites in the Upper S.Gain river area. (Lead/Zinc), the Bod-y-fuddau farm area or southwards on the faults, or lastly on the Plas Capten area. Any base metals detected are likely to be controlled by the Clogau as well as fault structures, and will probably have a useful precious metal content.

D. Dungate September 1972.