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LINDA VALLEY EXPLORATION

JUNE QUARTER, 1983-84

AND

DRILLING RECOMMENDATIONS

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June, 1984

c.c. - Mt. Lyell
- R.G.C. Sydney

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LINDA VALLEY EXPLORATION 29/3/84 to 22/6/84 AND RECOMMENDATIONS

1. SUMMARY

This report describes the geology of the Linda Valley and its economic potential, and gives an outline of work proposals for the next six months.

Geological studies at Lyell over the past three years have indicated that the idea, accepted since 1970, that the Mount Lyell ore bodies are volcanogenic and restricted to the Mount Read Volcanics, is erroneous. The mineralisation is related to hydrothermal events which post-date the Gordon Limestone and Crotty Quartzite and is therefore probably of Devonian age. This indicates that there is a possibility of mineralization in structurally favourable zones within reactive rocks other than Mount Read Volcanics, such as the Pioneer Beds and Gordon Limestone. The Linda Valley is structurally the most complex feature intersecting the Owen "Rift" structure, and has in the past yielded substantial tonnages of high grade ores with fairly high precious metal values. The lithologies and structures within the Linda Valley are also similar to those associated with some of the "newer" styles of gold mineralization, so that the possibility of existence of economic mineralization is increased.

The major target metals are gold and silver, either with or without associated base metals. On the basis of a major literature and data search coupled with reconnaissance mapping several possible conceptual models for mineralization have been developed, each of which could occur in the Linda Valley.

Deposits at the base of the Pioneer Beds may occur beneath the town-site of Gormanston. There is room in this location for 3 to 10 million tonnes of mineralization in a position

structurally similar to North Lyell. The ore type could be either like that of North Lyell (6% Cu 40 g/t Ag) or parts of the Blow deposit (Cu 6%,Ag 140 g/t, Au 6 g/t) or late stage (Au >15 g/t).

The possibilities within the Gordon Limestone are more widespread, both geographically and as regards to possible ore type. The two main styles of deposit are potentially vein and replacement mineralization. Vein deposits are likely to be of the native metal copper-silver type with 2 to 4% Cu, 30 to 100 g/t Ag and possibly 1 to 2 g/t Au. The length of potentially mineralized structure indicates that there could be up to 20 million tonnes of this style of mineralization. Replacement bodies could be of the lead-silver type or gold dominant style. There is certainly sufficient room for a significant deposit of this type, but further work, mainly mapping and sampling, is required before any assessment of potential is possible.

At this stage of investigations it is proposed to drill three 400m holes at Gormanston to test the possible ore position. Due to uncertainties in definition of the target this is regarded as a minimum test before abandonment. One hole is proposed for the MacDowell P.A. area. This hole is intended to test the significance of known gold mineralization and to provide information on alteration and structural control. The exact location and depth require detailed mapping and interpretation as a precursor. The final proposal is to drill one hole at Cemetery Creek. This is primarily designed to test the style and setting of mineralization beneath a zone of intensely altered limestone which outcrops in the creek. Neither of these two holes is likely to exceed 300m depth. It is not proposed to drill the native metals potential at this stage as further investigative studies are required to better define ore controls.

2. INTRODUCTION

For the purposes of this report the Linda Valley Exploration area is defined as that part of the geographical Linda Valley which is underlain by Pioneer Beds and Gordon Limestone and lithological and alteration facies variants of these (Fig 1). It should be construed, and is not intended to imply, that this area is the sole area with mineral potential but merely reflects the geographical distribution of current geological knowledge, and as such it is intended that this report is a progress report in the overall assessment of the economic geology of the Mount Lyell environs.

To avoid duplication, this report should be read in conjunction with those of Sillitoe and Brook. These two reports are essential background information.

3. LYELL GEOLOGY AND EXPLORATION MODELS

The early studies of Lyell geology noted the intimate relationship between the sulphide ores of copper and hematitic replacements of Owen Conglomerate (Gregory 1905, Loftus Hills 1927, Powell 1894, Schlapp 1892) in areas of cross faulting (Gregory, Loftus Hills, Powell, Conolly 1941) and the physical connection between volcanic hosted structurally controlled sulphide copper mineralization and native copper deposits in Gordon Limestone (Grayson 1903, Batchelor 1905). These workers and others (Cundy 1901; Alexander 1953) noted the presence of sometimes mineable vein and replacement sulphide bodies in Owen Conglomerate and Pioneer Beds. This implies an Ordovician or younger age for the mineralization. Later workers (Solomon 1967, Markham 1968, Jago et al 1972, Green 1971, Walshe 1971, Reid 1970,1975, Corbett 1981/Cox 1981) based largely on supposed stratigraphy of the volcanics, fossil gossans, detrital hematite in Owen Conglomerate and schistosity relationships developed a volcanic exhalative/replacement model for the origin of the Mount Lyell ore bodies. The copper clay deposits were interpreted as Ordovician or Tertiary indigenous and transported gossans. Later work at Lyell (Bird, 1982) suggested a two stage process with the volcanics being the source rocks for later Devonian(?) ore forming processes. This idea is supported by other workers (Hendry, 1972). Continued work at Lyell has shown that the volcanogenic model is not applicable to Mount Lyell and that mineralization is likely to have been emplaced either during the Devonian (Brook, 1984) or Ordovician (Sillitoe, 1984). The writer prefers a multistage sequence of mineralization, with economic mineral emplacement in the Devonian. The demise of the recent erroneous volcanogenic theory and reinstatement of the earlier epigenetic model allows the development of new concepts in ore search at Lyell, in areas regarded hitherto as being unfavourable for economic ore bodies.

Literature search within the Mount Lyell Mining & Railway Co. archives(?) over the past two years and field observation culminating in the visits by Brook and Sillitoe in 1983 and 1984 have disclosed some long ignored ore types at Lyell, and the new understanding of the origins of the ore bodies has lead to the recognition of areas with potential for occurences of these early days ore types with their high precious metal contents. High grade gold production from the Lyell area has so far been fairly limited, but some very impressive grades have been reported from individual small shears, one at the Blow averaging 25 oz. per ton. Also at the Blow a small vein/replacement body averaged 1000 oz of silver per tonne, and one stope at Lyell Blocks was known as the silver stope; the grade is however not known.

Brief descriptions of several areas are now given so as to enable an understanding of the economic geology of the valley.

The Blow ore body (Fig.1) is a replacement deposit, dominantly volcanic hosted, in the South West Corner of the Valley. The major portion of the mineralized mass (it could hardly be called ore) was a massive pyrite replacement body with minor other sulphides and barite and cherty silica, averaging 0.4% Cu, with 3 g/t Au at RL 370 decreasing to 0.4 g/t 200m down and silver increasing from 30 g/t to 100 g/t over the same vertical range. Replacement extended outward from the intersection of a NE striking cross fault and the NNW striking Great Lyell Fault, along schistosity developed in flow banded, sometimes spherulitic, rhyolites and associated tuffs. The bottom of the sulphide body is at RL 170m-possibly it is not co-incidental that this is only 30m above the base of the North Lyell ore. The quartz-clastic Owen sediments adjacent to the fault-controlled feeder conduit were extensively replaced by hematite and barite. The width of the replacement zone was 40m at RL 370, diminishing to zero at RL 280. (Powell,). Shale horizons were metasomatised to pink and purple sericite-pyrophyllite schists. Sphalerite and galena were deposited in volcanics adjacent to the Great Lyell Fault in a zone 0.2 to 3m wide where the main pyrite body was close to the fault, both as disseminated mineralisation (comparable with Prince Lyell 10M Level Southern Exhaust Airway access exposure) or as finely banded "exhalative" (!) massive sulphides identical to those of Tasman Lyell. Copper-silver and gold were introduced to the rocks - Owen, hematite, schist and pyrite - in two apparently separate subsequent events, localized within and adjacent to a complex fracture pattern that developed in the feeder zone at the south east corner of the pyrite mass. Copper-silver mineralization occurred in the four rock-types mentioned above, as sulphide poor (<0.1% S) white to grey "cherts" with 30 to 3000 g/t Ag to sulphide rich assemblages (S ≈40%) with up to 50% Ag as bornite-stremeyerite grading to peripheral chalcopyrite-chalcocite mineralization. Barite is an essential component and was used as a prospecting guide (Powell), and tennantite is common. Gold occurs separate from the silver and age relationships are uncertain. The gold occurs in sulphur-poor pyrophyllite schists (S<1%, commonly nil) developed in the hematised shale horizons and Great Lyell Fault for the most part, but also within Owen and pyrite. The shears were narrow (0.1 to 30cm) and high grade (750 g/t average), with grades

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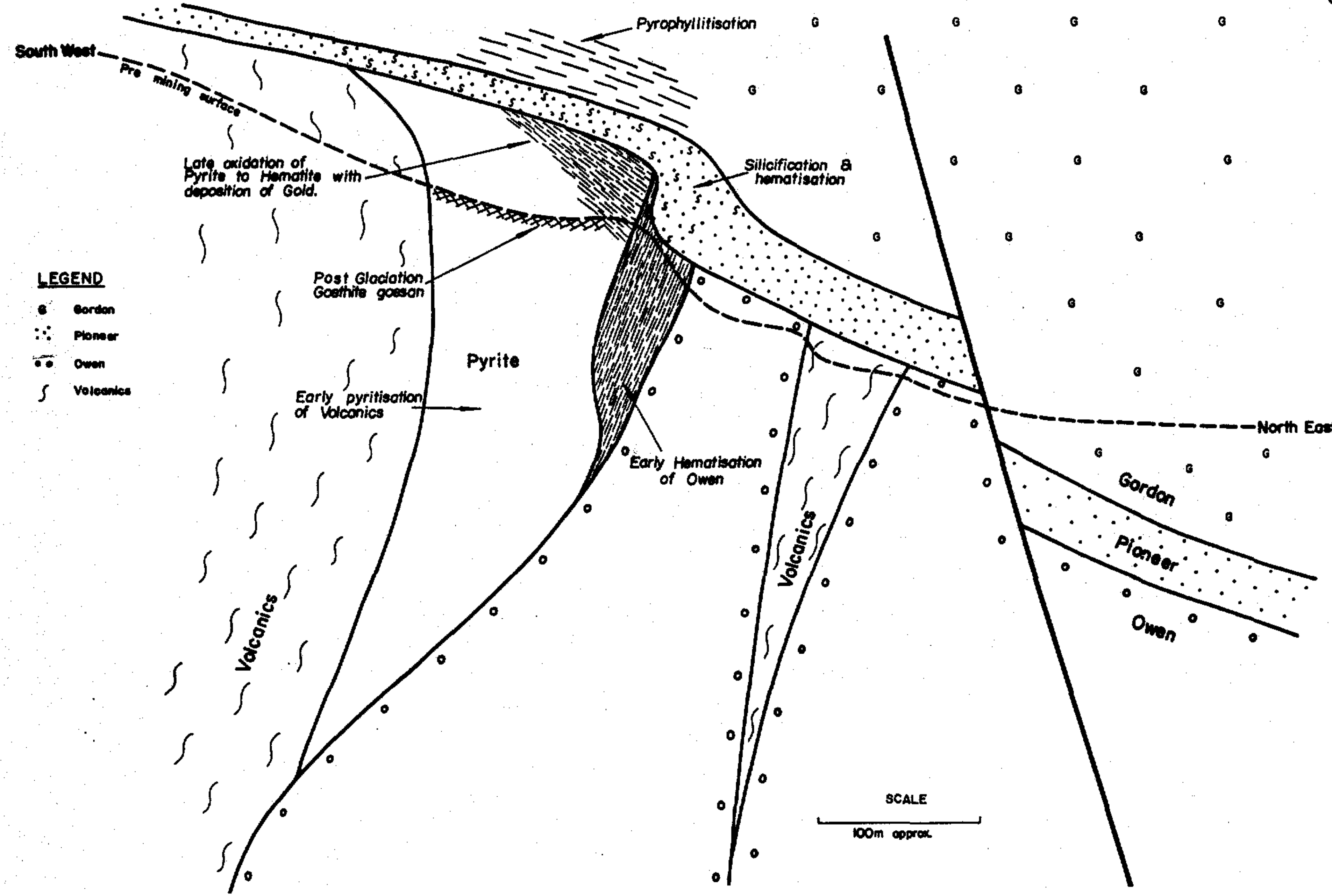
diminishing outward from the shear to a few g/t at 2 metres. Significantly the gold, even at 2000 g/t- was often not visible in the panning dish. These gold-rich shears extended down dip to within 30m of the base of the hematite alteration of the Owen. Adjacent to the Great Lyell Fault (on both sides) a purple hematite-barite "mud" occurred to a depth of 30m. This averaged 300 g/t, with some values to 6000 g/t. The hangingwall contact was complex with 1 to 6m alternating pyrite and "gossan" layers dipping 30° east. Further west the gossan thinned rapidly, from the 20m thickness at the Great Lyell Fault, to 0-3m of goethitic cellular gossan with 0-15 g/t, although near the Great Lyell Fault there was some interlayering of goethite and hematite just below the surface. From a re-construction of the Blow geology at the time of mineralization it appears likely that the hematite-gold ore formed as a result of late acid leaching processes beneath Pioneer Beds (Fig. 3).

The North Lyell, Lyell Blocks, Crown Lyell and Lyell Tharsis Leases (Fig. 1) covered different parts of the same ore system and will be described as one unit, rather than several discrete ore bodies unrelated to each other. This group of mines is situated in the North West corner of the Linda Valley in an area of considerable structural complexity. Put simply, Pioneer Beds and Gordon Limestone occupy a paleovalley trending NW across the Great Lyell Fault where it crosses a narrow graben, trending WNW. The structural picture became more complex as a result of syn-and post depositonal folding and faulting. The original open syncline was refolded and sliced up by a large family of WNW striking steep dipping faults. These faults acted as conduits for mineralizing fluids and the nature of resulting ore bodies depended on the local structural geometry and wall rock type.



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SECTIONAL VIEW OF THE BLOW MINE
RECONSTRUCTION AT TIME OF MINERALISATION

Fig. 3.

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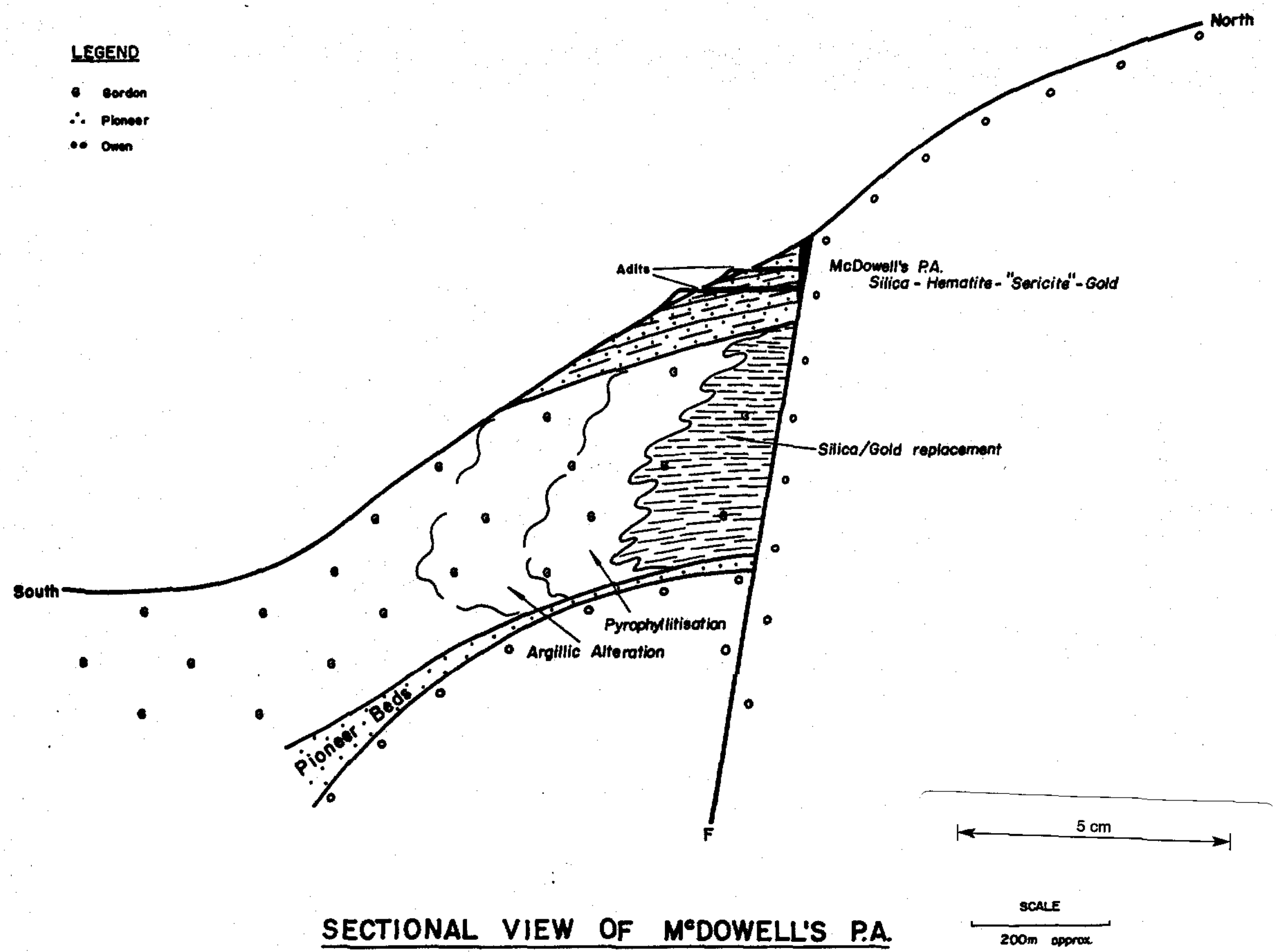
In their passage from depth the fluids traversed volcanics, Owen Conglomerate, volcanics (not always present), Pioneer Beds, and Gordon Limestone, at least, as overlying lithologies have been eroded. The effect on the deeper volcanics is nowhere known due to the great depth of this unit, although the upper contact with overlying Owen forms a conceptually highly attractive potential ore position. Within the overlying Owen the wall rocks are generally silicified and hematised, although exposure is restricted to the upper 50m only. In the volcanics the wall rocks of the feeder conduits are extensively silicified and the siliceous material carries chalcopyrite in a highly pyritic ore. The Pioneer Beds have a basal unit with volcanic rock parentage overlain by a quartz clastic sediment with grainsize from 0.5mm to 50mm. The contact with the underlying volcanics is generally flat dipping, and hence there is a marked rapid change in conduit wall rocks in passing up the channel. The siliceous Pioneer Beds have been massively silicified, and acted as a dam to further upward solution flow, resulting in the replacement by silica, barite, bornite, chalcocite and chalcopyrite of the lower volcanic and siliceous clastic Pioneer beds and the volcanics themselves. Most of the feeder fractures were evidently open at intervals during mineralization as massive bornite bodies occur in the silicified Pioneer Beds, and the fracture zones are also extensively pyrophyllitized within these beds.

The basal units of the Gordon Limestone are dominated by sandy shale horizons, with increasing carbonate contents higher in the sequence. The upper horizons are shaley limestones. The mineralizing fluids reacted with the lime rich horizons to produce an impervious pug layer, whereas the shale beds were converted to pyrophyllite-sericite schists. Within the shear zones sulphide mineralization is found where the wall rocks are schists, and native metals occur in the pug, associated with goethite. The different styles of mineralization had different metal grades, although with minor exceptions all were low in gold, typically being 0.3 to 0.5 g/t. Feeder zones in volcanics averaged 2% Cu, volcanic and volcaniclastic replacement bodies 8% Cu, ore bodies in siliceous Pioneer Beds ran 30-40% Cu, pyrophyllite schist bodies 8% Cu and pug bodies 2½% Cu. Silver averaged 30g per % Cu in bornite ores and less in chalcopyrite ores, down to 3g per % in disseminated chalcopyrite/pyrite bodies. A small body within Owen Conglomerate on the Blocks Lease is of some considerable interest. The ore had only barite as gangue, with bornite galena and sphalerite as the major sulphides. Silver contents were 6 oz per % Cu. Gold values were highly variable, up to ½ oz per ton and unrelated to the sulphides.

Mc Dowell P.A. (Fig. 1) is the best documented small gold mine in the Linda Valley. Coarse free gold occurred in a goethitic acid-leached fault breccia pipe, evidently at the junction of the North Lyell Fault and a NW striking valley fault. The wall rocks are Crotty Quartzite(?) on the south and Owen Conglomerate on the North (Fig. 4). The ore grade is not known but the majority of the gold was recovered by hand sorting, so the grade was probably high. Similar old workings occur for a few hundred metres east and west of Mc Dowells, wherever creeks have cut down through the hill side scree.

Copper "clays" were worked elsewhere in the Western end of the Valley by Lyell Consols, North Lyell Pioneer, and King Lyell (Fig. 1). In each of these deposits Pioneer Beds lie directly on Owen Conglomerate. The mineralization



SECTIONAL VIEW OF McDOWELL'S P.A.

POSSIBLE GOLD DEPOSITION

LOOKING WEST

FIG. 4

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is dominated by native copper and cuprite as veinlets and disseminations in a goethite matrix-this material looks like a gossan, but is not. Some parts of the "gossans"- it is not now known which - carried gold values of economic significance, with relatively coarse gold - up to 6 oz pieces. Presumably these occurrences were similar to McDowells. The mineralization occurs mainly in near vertical fault zones up to 15m wide, but also as replacements of favourable beds, particularly just above the Pioneer Beds. Gold mineralization is apparently restricted to the fault zones. Minor gold values are found in Owen Conglomerate on Tharsis Ridge where the Owen has been both acid leached and replaced by hematite and barite over a very restricted area.

Recapitulating, the general sequence of mineralization has been pyritization with minor Ag, Au and Cu; minor Pb-Zn sulphides; Cu-Ag-Barite (silicification); and Au (with acid leaching). Major mineralization is localized where chemically reactive rocks-volcanics or limestones- are cut by major faults (which generally strike WNW) where there exists a mechanism for fluid entrapment (the base of the Pioneer Beds where these overlie volcanics or the base of limestone horizons within the Gordon where these overlie lime-rich sands and shales). Mapping shows that the first of these situations exists only in the Gormanston area, whereas the possibilities for the second are widespread in the Linda Valley.

4. THE GORMANSTON PROSPECT

The area under the Gormanston glacial deposits (Fig.11) has long been regarded as "a good place to look" by previous Lyell geologists, mainly because of its apparent structural complexity and that some 600m of Great Lyell Fault were untested. The area was first recommended by H.J. C. Conolly in 1940, and in 1948 (Webb, 1958) a number of geophysical techniques were applied. Most of these only partly covered the area of interest as bad weather and ground currents induced by electric underground trains severely hampered the work. Nevertheless some useful electrosoundings were completed together with a self potential survey and equipotential survey. The E.P. Response is probably caused by near surface clays, and compares well with a zone of acid leaching of Owen and Pioneer Beds. The S.P. results show that the E.P. response is not due to sulphides, but does indicate an area to the east of the waterfall at 4220N 6960E as possibly being due to sulphides (which would be in Gordon Limestone). The array spacing used for the electrosoundings was insufficiently expanded to give information below 200m, but if considered with the results of later drilling some conclusions can be reached regarding alteration styles in the Gordon above the Pioneer Beds (Fig.7). Following some geological investigations in 1967 two holes were completed at Gormanston (Campbell, 1968), however the hydrothermal alteration of the Gordon was not recognised and it was thought that the hole had drilled through glacial sediments. A further three holes were drilled in the following year (Campbell, 1969) and it was determined that the Gordon Beds above the Pioneer Beds had been altered to clays (Fig.5 & 10). However the Pioneer Beds were identified as Owen Conglomerate, the chromite of the Pioneer Beds having not been recognised. A study undertaken

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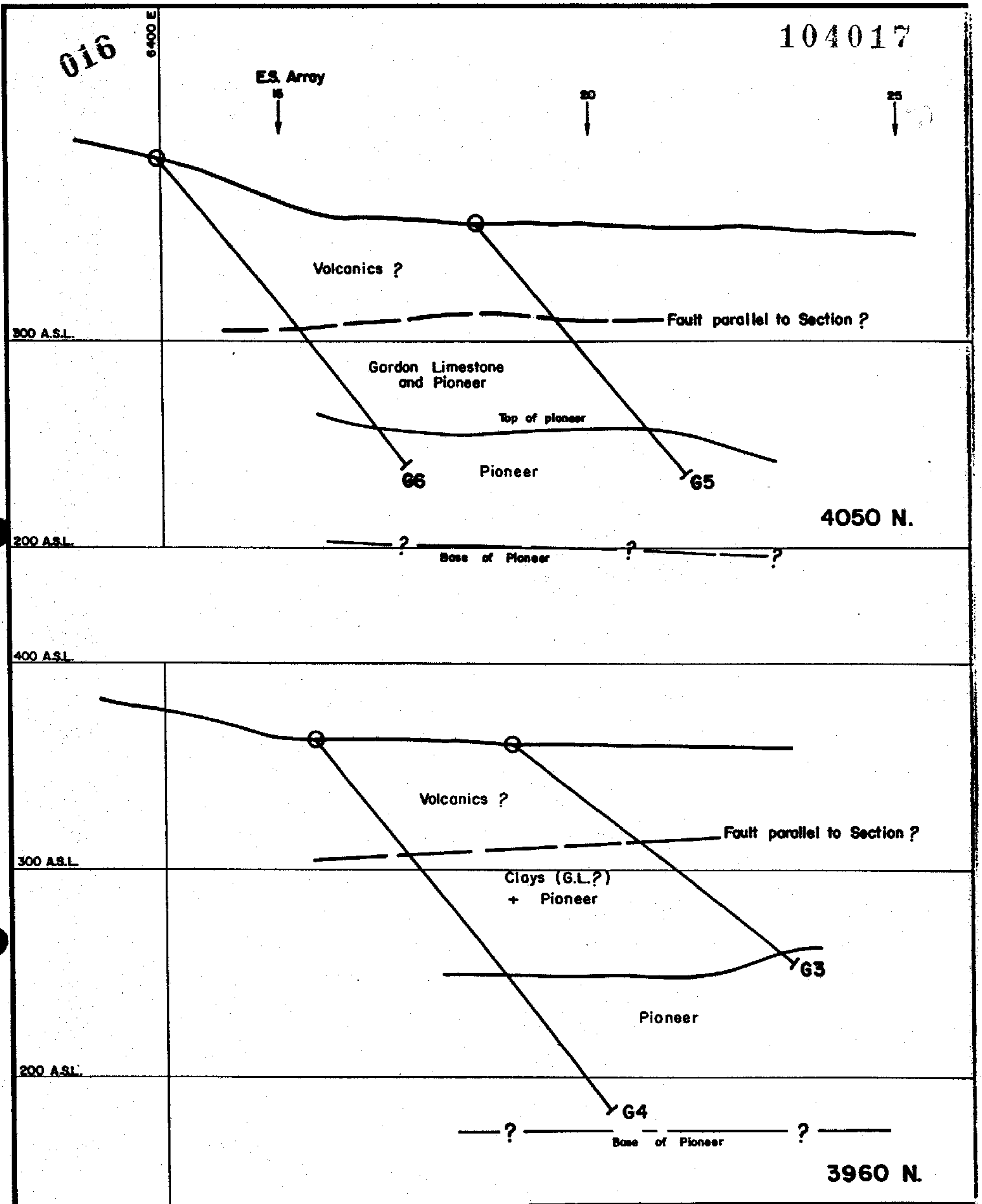

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GORMANSTON

INTERPRETATIVE DRILLING SECTIONS

(LOOKING NORTH)

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DRAFTSMAN	T.G.D.S.
DATE	July '84
REVISIONS	
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SCALE 1:2500 — 25 0 25 50 Metres

FIG. 5.

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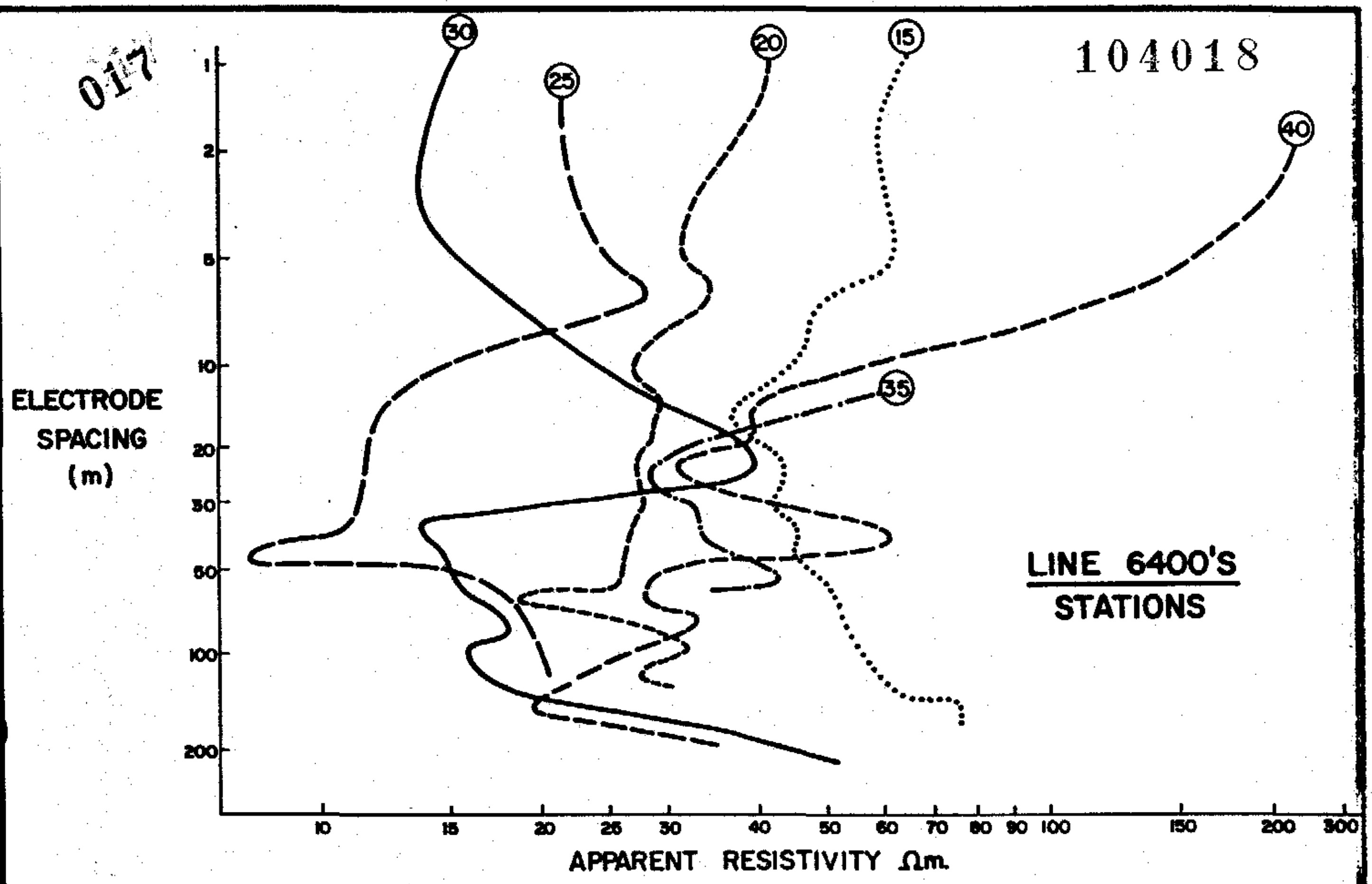

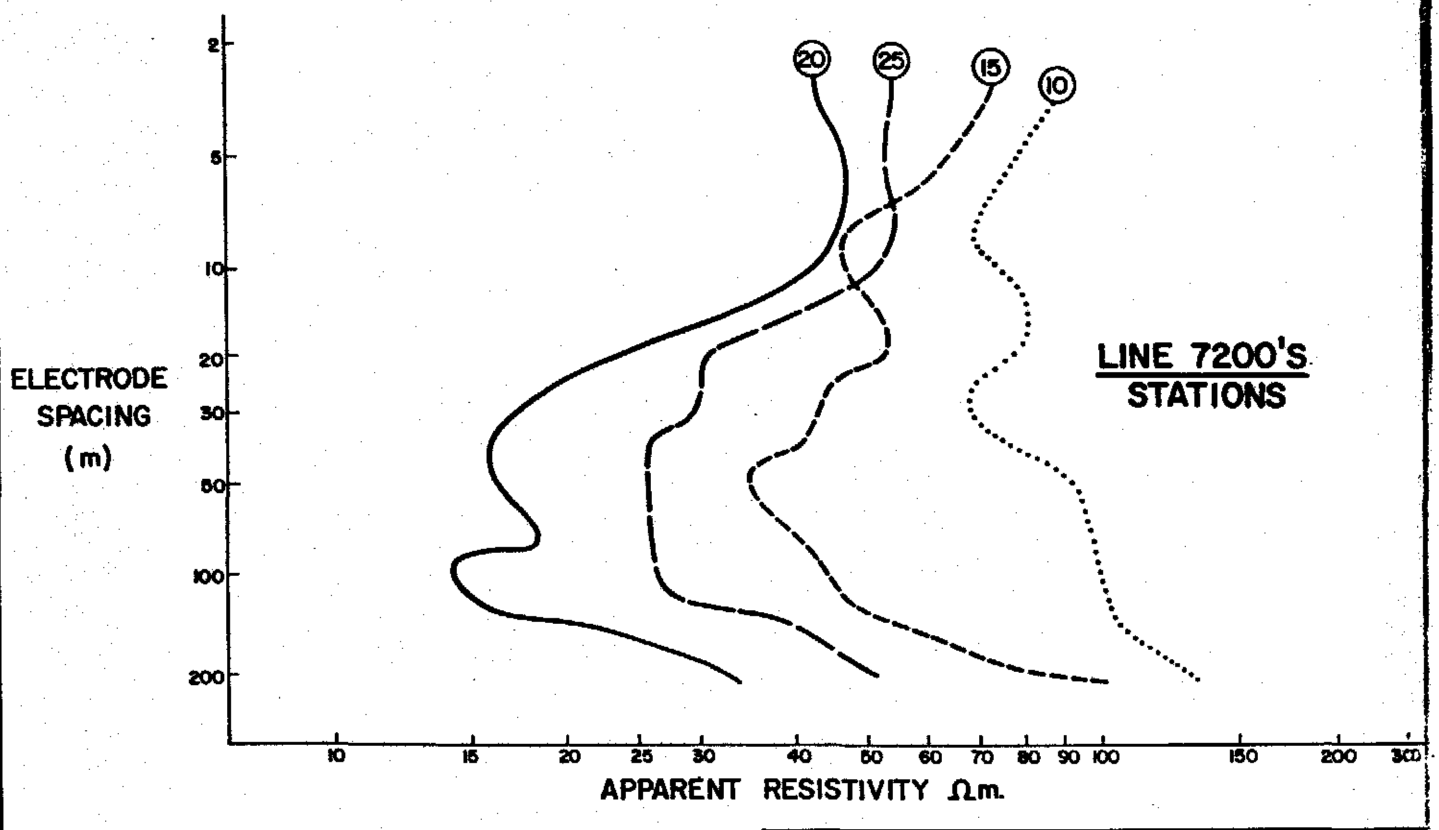

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GOLD FIELDS EXPLORATION PTY. LIMITED

GORMANSTON ELECTROSOUNDINGS

DRAWN BY : M.J.E
DRAFTSMAN: T.G.D.
DATE. : June
REVISIONS :

FILE NO.

SCALE 1: Metres

FIG. 7.

at this time concluded that mineralization was volcanogenic and therefore Gormanston was an unattractive target (Reid, 1970). Five holes were drilled west of Gormanston to test the volcanics for volcanogenic mineralization. Investigations between 1982 and 1984 showed that there were fatal flaws in the observations which lead to the conclusions that the mineralization was volcanogenic (Sillitoe, op. cit.) and a re examination of the Gormanston core and careful mapping of the surface allowed a comparison with other epigenitic ore bodies at Mount Lyell.

Structurally the area is somewhat similar to North Lyell, with Linda Valley faults intersecting the Great Lyell and Tharsis faults, and the Great Lyell Fault abutting the haulage unconformity beneath Pioneer Beds (Fig.8). In detail there are differences which are probably not important.

The alteration of the basal Gordon Beds above the Pioneer at Gormanston is as intense as at North Lyell, but of a different style. At North Lyell the alteration has, above the main sulphide body, produced a pyrophyllite-sericite-quartz schist, with varying pyrite contents and generally very little geothite. At Gormanston the alteration has produced a pyrophyllite goethite assemblage. Thus could be due to the original hydrothermal solutions having a higher Fe:S ratio at Gormanston, or the consumption (during sulphide precipitation in the volcanics below the Pioneer Beds) of all available sulphur, or to a superimposed late acid-leach hydrothermal event. The style of mineralization at the Blow and South Lyell, 400m distant, is supportive of the possibility of a high Fe:S ratio, and the absence (possibly only apparent) of barite from the pyrophyllite-goethite assemblage is suggestive of all sulphur being consumed.

Outcrops just north of the recreation ground indicate that acid leaching has been far more intense at Gormanston but gives no hint as to the time of this event. The precipitation of a large mass of sulphides would itself produce considerable quantities of acid fluids, but the possibility of late acid leaching of any pre-existing sulphides should not be ignored. Given the strong possibility that this happened at the Blow and resulted in the formation of hematite with high gold values then this could be regarded as increasing the potential of the area, rather than reducing it. The depth and possible size of the concealed mineralization can be roughly estimated from the existing data by comparison with North Lyell. The thickness of the Pioneer Beds at North Lyell ranges from 100m to 200m with the greater thickness due to syn - depositional slumping, so that a likely thickness at Gormanston is within this range. The drilling to date indicates that the top of the Pioneer Beds is nearly horizontal at R.L. 250m, i.e, 130m below the surface, so that the base of the Pioneer should be between RL 50 and RL 150m-at a depth of 230 to 330m below the cricket pitch. The plan limits of the possible zone of mineralization can also be approximated. The northern limit is defined by the Proprietary Fault (new name) which forms the edge of the Gormanston Syncline (new name). The western limit is defined by the limit of the Pioneer Beds. Surface exposure indicate that it is probable that Pioneer Beds occupy the whole of the wedge shaped area between Tharsis and Proprietary Faults. The Tharsis Fault is probably largely post Pioneer Beds and defines the southern limit of possible mineralization by virtue of governing the distribution of Pioneer Beds. By analogy with North Lyell the sub-Pioneer position of the Great Lyell Fault will define the eastern limits to the area of potential mineralization. The fault can probably be located on circumstantial evidence. Owen Conglomerate is normally a highly resistive rock, however a large area centred on 4150N 6700E has been eroded away where it would be expected to outcrop strongly. This area is bounded on the south by the Proprietary Fault, adjacent to which outcropping chromite bearing Pioneer Beds have suffered intense acid leaching and pyrophyllitisation, with mobilisation of chromium. It is inferred that the Owen has been similarly effected and been converted to an unconsolidated easily eroded aggregate of clay and sand. Using the North Lyell model the intersection of the Great Lyell and Proprietary Faults is likely to have been a major fluid conduit, and therefore the sub Pioneer outcrop of the Great Lyell Fault is possibly directly beneath this area of acid leached Owen. The five drill holes G2 to G6 can be used to interpret the 1948/49 electrosounding profiles (which cover a wider area than the drilling) and to define the alteration halo above the Pioneer Beds; at North Lyell this is closely related to the orebody outline in plan. This indicates a possible area of 70,000 to 100,000m^2 for the mineralization. The indicated volume of pyrophyllitised sediments at Gormanston is similar to that at North Lyell, so it is quite possible the mineralization is of the same order of thickness, i.e. average 20m, = 60t/m^2. The potential tonnage at Gormanston is therefore 5 million, give or take a factor of 2- i.e. 3 to 10 million tonnes. The ore type could be massive pyrite with 2 g/t Au, 60 g/t Ag, 1.3% Cu or high silver bornite (?6% Cu, 500 g/t Ag minor Au) as sulphide phases or leached pyrite-hematite ore with high Au (? 30 g/t), or some mixture of these.

5. PROPOSED DRILLING

5.1 Gormanston

N.B.: The base of the Pioneer is assumed to be at RL 100m in all cases.

Hole A

To test the volcanics beneath the Pioneer Beds in the area of intense pyrophyllitisation located by G6 and G5. With increasing depth to the bottom of the Pioneer, the subcrop position of the G.L.F. will move further west, hence the west dip to the hole.

Hole B

To test the Proprietary Fault zone in the area of most intense leaching.

Hole C

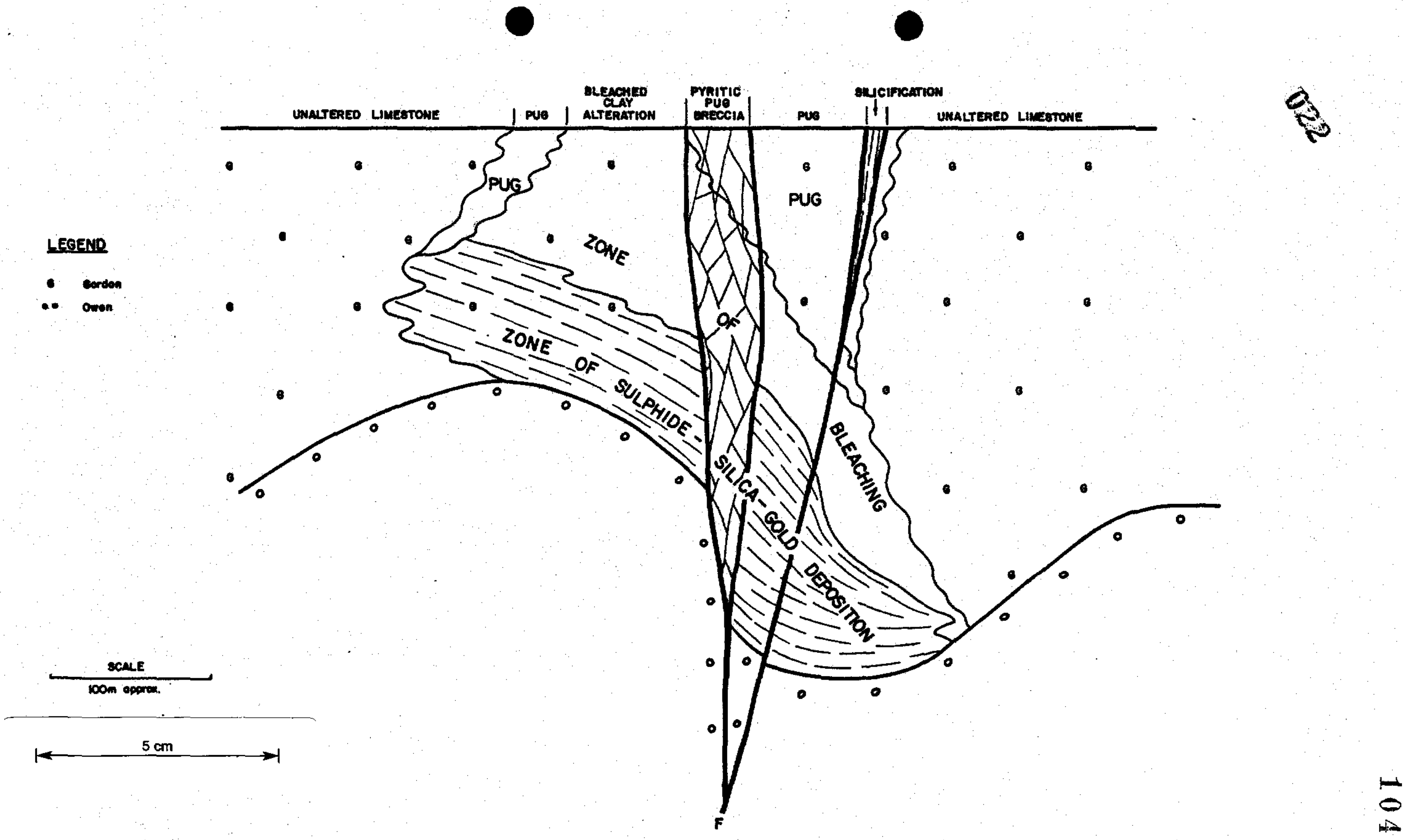
To test the sub-Pioneer Volcanics beneath an area of surface hematisation.

If the three holes are barren the residual potential is far less than 2 million tonnes.

5.2 McDowells and Cemetery Creek

McDowells: a hole of probably not more than 300m length is proposed to test the limestones (which should occur) below the stoped breccia in sandstone. Site selection depends on surface mapping.

Cemetery Creek: A hole of probably not more than 300m length is proposed to test the breccia zone at the base of the limestone. Site selection is dependant on detail creek mapping (Fig. 9).



SECTIONAL VIEW OF CEMETRY CREEK

POSSIBLE GOLD MINERALISATION

FIG. 9

5.3 "Copper Clays"

At this time it is not proposed to test these occurrences as targetting requires a greater understanding of ore shoot control. This may take some time to complete as the possible mineralized area is rather large and requires detailed mapping.

BIBLIOGRAPHY

Alexander, J.M., 1953	Geology of the Mount Lyell ~~Field~~ in Geology of Australian Ore Deposits, Ed. A.B. Edwards, Aus. I.M.M. Melbourne
Batchelor, W.T., 1905	Notes and observations on the Rock Formations and occurence of Ores in the North Lyell Mine, in Gregory, J.W., the Mount Lyell Mining Field Tasmania. Aust. Inst. Mining Engineers Melbourne.
Bird, M.J., 1982	An Assessment of the Economic Geology of Mount Lyell. Unpublished report to the company.
Brook,W.A., 1984	Mineralisation at Mount Lyell and Exploration of the Buffer Zone Mine Lease and E.L. 9/66. Unpublished report to Goldfields Exploration Pty. Ltd.
Campbell, J.D., 1968	Notes on the Gormanston Prospect. Unpublished report to Mount Lyell Mining & Railway Co.
Campbell, J.D, 1968	Notes on the Geology of the Mount Lyell area. Unpublished report to Mount Lyell Mining & Railway Co.
Campbell, J.D., 1969	Notes on the Gormanston Prospect. Unpublished report to Mount Lyell Mining & Railway Co. Ltd.
Campbell, J.D, 1970	Long Range Exploration at Mount Lyell Unpublished report to Mount Lyell Mining & Railway Co. Ltd.

Conolly, H.J.C., 1949 Exploration on the Mount Lyell Field. Unpublished report to Mount Lyell MIning & Railway Co. Ltd.

Corbett, K.D., 1981 Stratigraphy and Mineralisation in the Mount Read Volcanics, Western Tasmania Econ. Geol. v 76 pp 209-230

Cox, S.F., 1981 The Stratigraphy and Structural setting of the Mount Lyell Volcanic Hosted Sulfide Deposits. Econ. Geol. v 76 pp 231-245

Cundy, W.H., 1901 Reports on Mining Tenements. Unpublished reports to Mount Lyell Mining & Railway Co.

Grayson, L.W., 1903 Report on Mine, Plant and Machinery. The Mount Lyell Blocks Mining Company N.L. Melbourne.

Green, G.R., 1971 Geology and Mineralization of the Cape Horn-Lyell Comstock area, Mount Lyell. Unpublished Honours Thesis, Univ. of Tasmania.

Gregory, J.W., 1905 The Mount Lyell Mining Field, Tasmania Australasian Institution of Mining Engineers

Hendry, D.A.F., 1972 The Geochemistry of the Mount Lyell Copper Ores. Unpublished Ph.D. Thesis, University of Cambridge.

Jago, J.B., Reid, K.O., Quilty, P.G, Green, G.R., and Daly, B., 1972 A Fossiliferous Cambrian Limestone from within the Mount Read Volcanics, Mt. Lyell Mine Area, Tasmania. J.Geol. Soc. Aust 19(3) : 379-382

Loftus Hills, C., 1927 The Origin and Distribution of the Ore Bodies of the Mount Lyell District. Unpublished report Tas. Dept. of Mines.

Markham, N.L., 1968 Some Genetic aspects of the Mount Lyell Mineralisation. Mineral Deposita, 3 : 199-221

Powell, R.W., 1894 Weekly reports. Mt. Lyell Mining & Railway Co. letter books.

Reid, K.O., 1970 Basic Exploration of the Mount Lyelll Mineral Field: A Reappraisal. Unpublished report to Mt. Lyell Mining & Railway Co.

Reid, K.O., 1975 Mount Lyell Copper Deposits; in Economic Geology of Australia and Papua New Guinea, Vo. 1 Ed. C. L. Knight Aus. I.M.M. Melbourne.

Schlapp, O.G., 1892 Weekly reports Mt. Lyell Mining & Railway Co. letter books.

Sillitoe, R.H., 1984 A Reappraisal of the Mt. Lyell Copper deposits, Tasmania : Implications for Exploration. Unpublished report for Gold Fields Exploration Pty. Ltd.

Solomon, M., 1967 Fossil Gossans(?) at Mount Lyell Tasmania Econ. Geol. 62(6) : 757-772

Thureau, G., 1886 The Linda Goldfield : Its Auriferous and Other Mineral Deposits. Tas. Parliamentary Papers No. 146

Walshe, J.L., 1971 — Geology of the Southern Mount Lyell Field and trace element studies of the pyrite mineralisation. Unpublished Honours Thesis. Univ. of Tasmania.

Walshe, J.L. and Solomon, M., 1981 — An Investigation into the Environment of Formation of the Volcanic Hosted Mt Lyell Copper Deposits using Geology, Mineralogy, Stable Isotopes, and a six-component chlorite Solid Solution Model Econ Geol v. 76 : 246-284

Webb, J.E., — Geophysical Survey at Mount Lyell 1948-9 Bureau of Mineral Resources, Geology and Geophysics Records 1958 No. 111.

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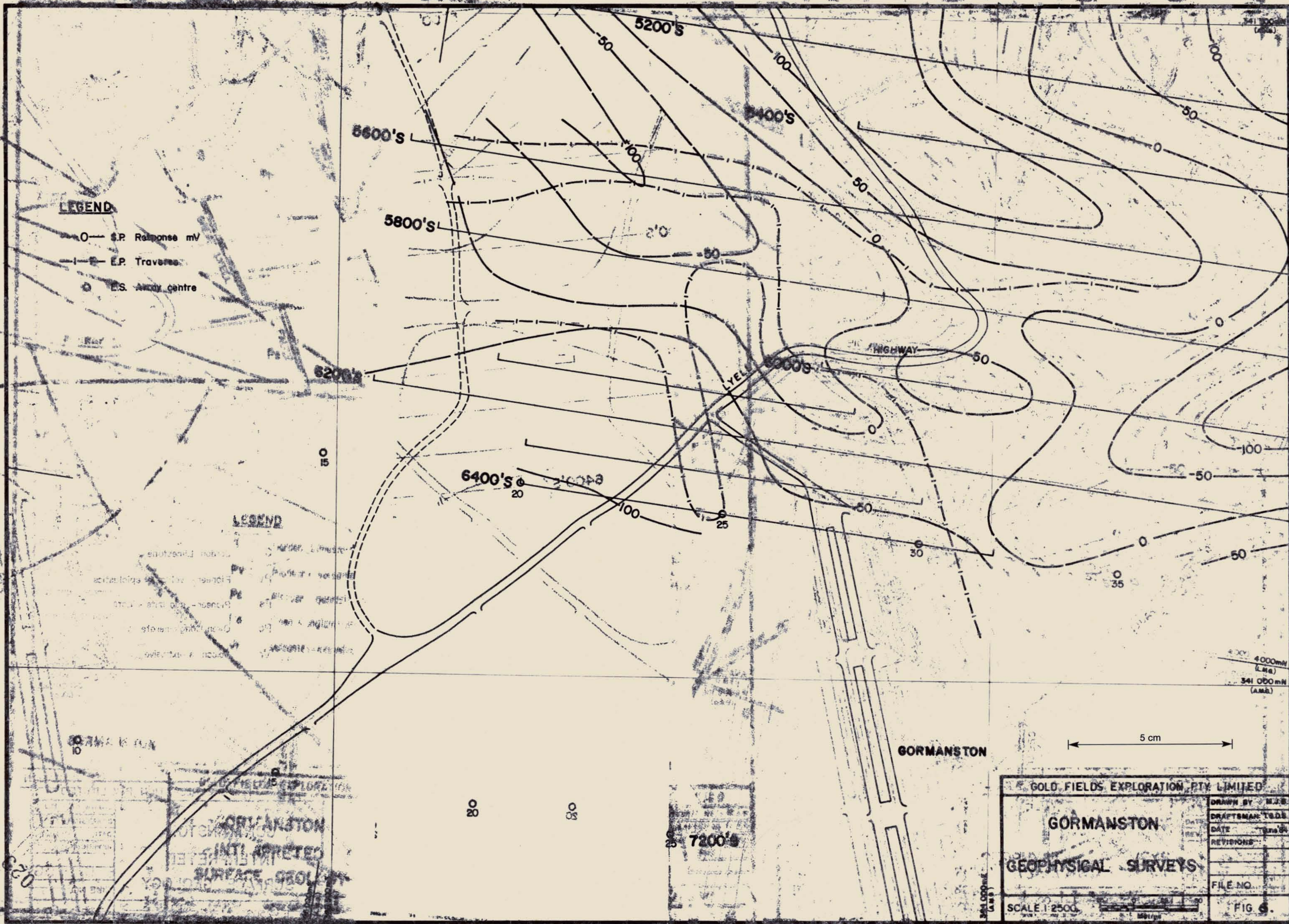
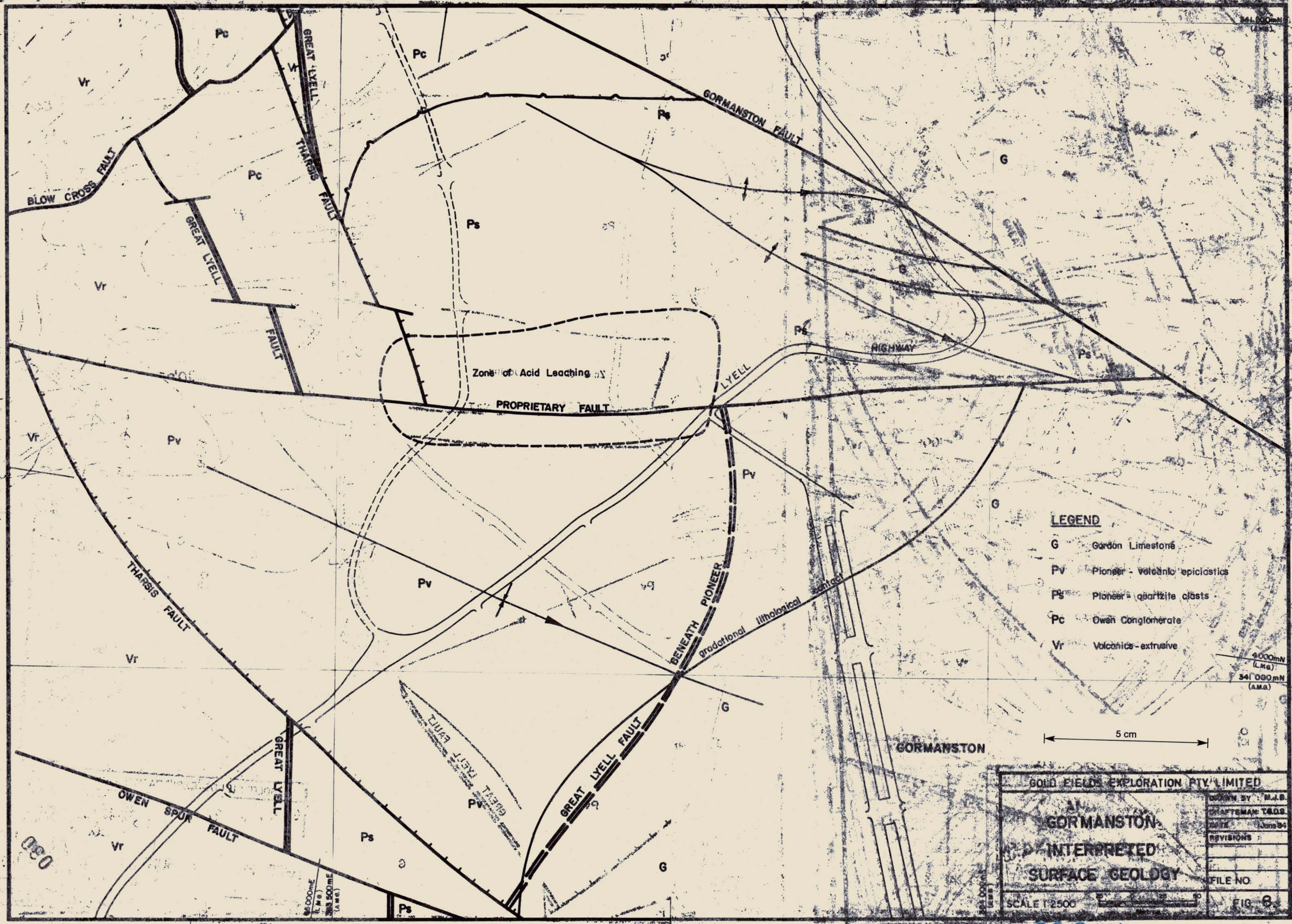
Crown III (Ccp)
WESTERN THARSIS
Lyell Blocks (Bn)
Crown Lyell (Ccp)
North Lyell (Ccp)
Idaho (Au)
Lyell Blocks (Cu)
North Lyell (Bn)
Lyell Tharsis (Bn)
(Cu)
Lyell Blocks
ROYAL THARSIS
White's Ck
Batchelors Quarry
Lyell Consols East (Cu)
Brown's Ck
Lyell Consols (Cu)
S or P
McDowells (Au)
(Au)
North Lyell Pioneer (Cu)
Zeplins (Au)
Lyell Pioneer (Au)
PRINCE LYELL
King Lyell (Cu)
Cooney's Ck
The Blow
Cemetery Creek
LYELL HIGHWAY
South Lyell
Gormanston
GORMANSTON
To Crotty
Bradshaw's Quarry (Ccp)
To Hobart
To Queenstown
LEGEND
A Acid Intrusives
C Comstock Tuff
G Gordon Limestone
J Jukes Breccia
O Owen Conglomerate
P Pioneer Beds
Q Glacials
S ? Crotty Quartzite
Creek with Alluvial Au
Au Lode Gold
Bn Bornite
Ccp Chalcopyrite
Cu Native copper
5 cm
GOLD FIELDS EXPLORATION PTY. LIMITED
LINDA VALLEY
GEOLOGY & MINERAL OCCURENCES
DRAWN BY : MJB
DRAFTSMAN : TGDS
DATE : June '84
REVISIONS :
FILE NO.
SCALE 1: 10000
200 100 0 200 400
METRES
FIG. 1
104029

85-2470



104030

85-2470



104031

85-2470

104032

85-2470


341 500mN (A.M.G.)
GORMANSTON FAULT
Gp
Pc
Vr
Sch
PROPRIETARY FAULT
Ps
Pv
LYELL
HIGHWAY
THARSIS FAULT
GORMANSTON
4000mN (L.M.)
341 000mN (A.M.G.)
104033
5 cm
LEGEND
Gp - Gordon Pug facies
Pve - Pioneer - epiclastic volcanic facies
Ps - Pioneer - sandstone facies
Pc - Pioneer - conglomerate facies
Vr - Dominantly extrusive rhyolitic volcanics
Sch - Schist of unknown parentage
GOLD FIELDS EXPLORATION PTY. LIMITED
GORMANSTON
OUTCROP GEOLOGY
DRAWN BY : M.J.B.
DRAFTSMAN: T.G.D.S.
DATE June '84
REVISIONS :
FILE NO.
SCALE 1:2500
FIG. 11

85-2470