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PRELIMINARY GEOLOGICAL REPORT

TO ACCOMPANY THE GEOCHEMICAL REPORT

of

THE MANNING PERMIT AREA, EL.73 N.S.W.

GEOPHOTO

PRELIMINARY GEOLOGICAL REPORT

TO ACCOMPANY THE GEOCHEMICAL REPORT

of

THE MANNING PERMIT AREA, EL.73 N.S.W.

Prepared for

PLANET MINING COMPANY PTY.LTD.

by

GEOPHOTO RESOURCES CONSULTANTS
BRISBANE, QUEENSLAND AUSTRALIA

November, 1967.

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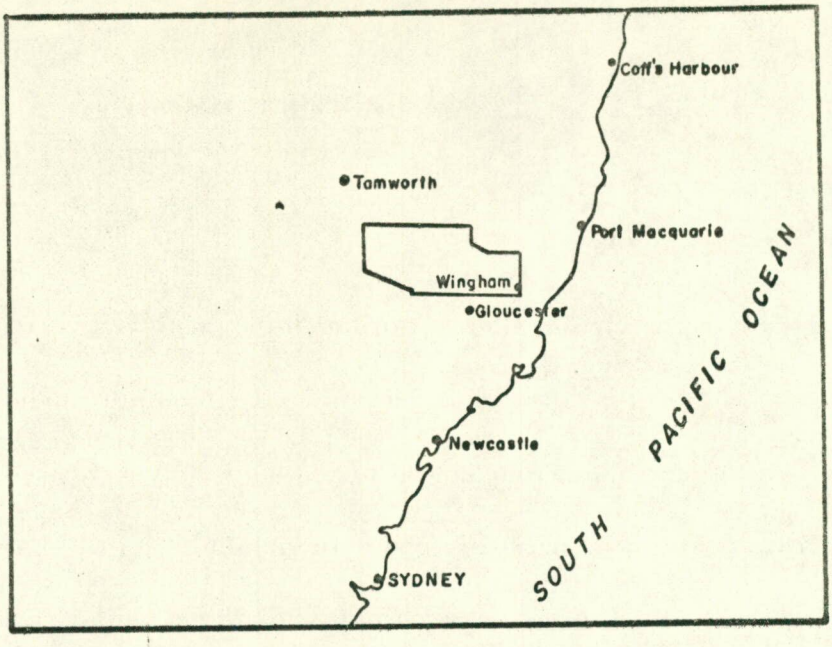
With 2 Tables and 4 Plates.



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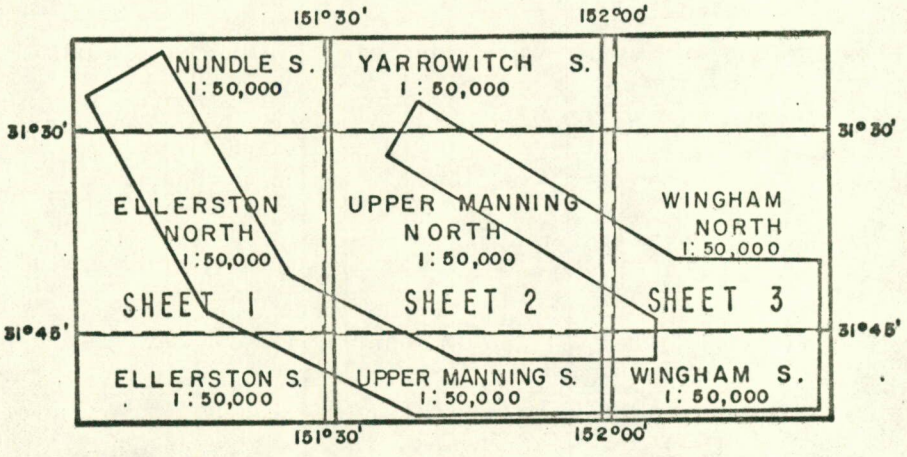


LOCALITY MAP

Plate I.

INTRODUCTION

PURPOSE

This report is an accompaniment to a geochemical drainage survey and report done for Planet Mining Pty.Ltd. and is a necessary support for interpretation of the geochemical data. An introductory appraisal of the exploration potential of the region has also been made as a prelude to a more detailed photogeological and geological appraisal accompanied by maps at a scale of 1:50,000 of the Manning District, New South Wales, that is currently being prepared by Geophoto Resources Consultants.

This preliminary report summarises the unpublished geological knowledge of Geophoto staff and others on this area and also the results of geological reconnaissance made during the period October 1st to November 10th, 1967.

DESCRIPTION OF THE PERMIT AREA

Permit E.L.73 (N.S.W.) of Planet Mining Pty.Ltd. (Pl. 1) covers the upper tributaries of the Manning River, N.S.W., notably the Little Manning, Barnard and Nowendoc Rivers and part of the lower reaches of the Manning River itself near Wingham.

Much of the country is mountainous, deeply dissected and heavily timbered. Relief varies from near sea level on flats at Wingham to 5,100 feet on the Banington Plateau near the southern edge of the permit boundary. River frontages and adjoining lower slopes have been cleared for pastoral purposes (beef raising and dairying). Timber is obtained from the slopes, ridges and plateaux and much of the northeastern part of the permit area is covered by state forests. Access to valleys is fair by use of a system of poorly formed secondary roads and tracks along the rivers; but slopes and ridges, apart from some rough timber tracks, are not easily accessible.

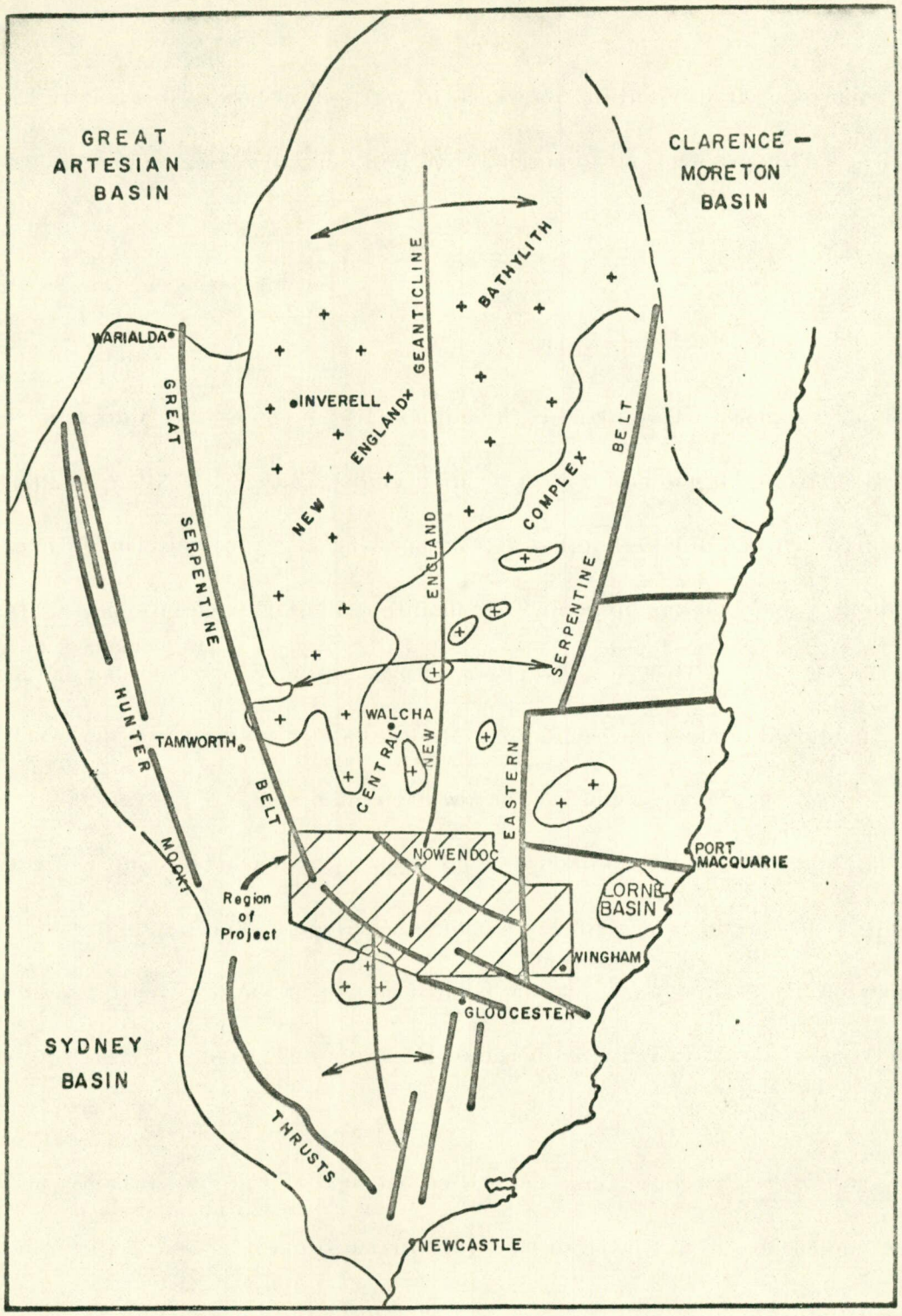
Further geographic information on the district accompanies the Geophoto geochemical report dated November, 1967.

GEOLOGY

PRESENT GEOLOGICAL KNOWLEDGE

Published work relating to any detailed geology of much of the area is non-existent, but some regional mapping relating to the extremities or extensions of the permit area is available in the works of Crook (1960 et seq.) about Nundle and by Voisey (1938 et seq.) about Wingham. Benson, in a series of publications dating from 1912, has a few general references to part of the area, as does Osborne (1950).

References to broad structural features may be found in Voisey (1959) and Osborne (1950). J.H. Rattigan (University of Newcastle unpublished) has mapped part of the Tomalla-Pigna Barney area (Polyfogal Complex) as an academic project about mineralised areas containing gold, magnetite and base metals. The University of Newcastle is continuing detailed mapping of the Nundle-Pigna Barney area (Nashar, 1959) which now totals 150 miles of unpublished, unedited maps at a scale of 1 inch :1200 feet. C. Mallett, the Geophoto field supervisor at Manning has been engaged in this work. H.W. Gutsche (University of New England) has studied the mineral deposits along the Eastern Serpentine Belt but was concerned mainly with deposits outside the permit area. Campbell and McElvey (Australian National University and University of New England) are about to publish a map of a small area in the Gloucester- Barrington area to the southeast of the permit area, and W. Mayer (University of New England) is engaged in field mapping about the Gloucester area. Binns et alia (1967) are working on academic problems on the central complex of New England that have some bearing on the geology of the permit area. The regional mapping section of the Department of Mines has incorporated the unpublished mapping of the Universities of New England and Newcastle on a draft of the 1:250,000 Tamworth Map Sheet (Pl. 1) scheduled for publication in 1968 and proposes to prepare the Hastings map sheet in 1968.



REGIONAL TECTONIC SKETCH

CENTRAL N.S.W.

SCALE

0 10 20 30 40 MILES

Plate 2.

Published work cited in the body of the report is listed in the appended references and unpublished work is cited by the name of the investigators discussed above.

TECTONIC SETTING

The permit area occupies the south central parts of the Central Complex of Voisey (1958, p.192, Pl. 2), a poorly mapped region forming the core of the New England Geanticline or Arch. This arch is a major tectonic feature formed by orogenic folding of eugeosyclinal sediments of Paleozoic age occupying a sub-unit of the Tasman Orthogeosyncline (Voisey, 1965).

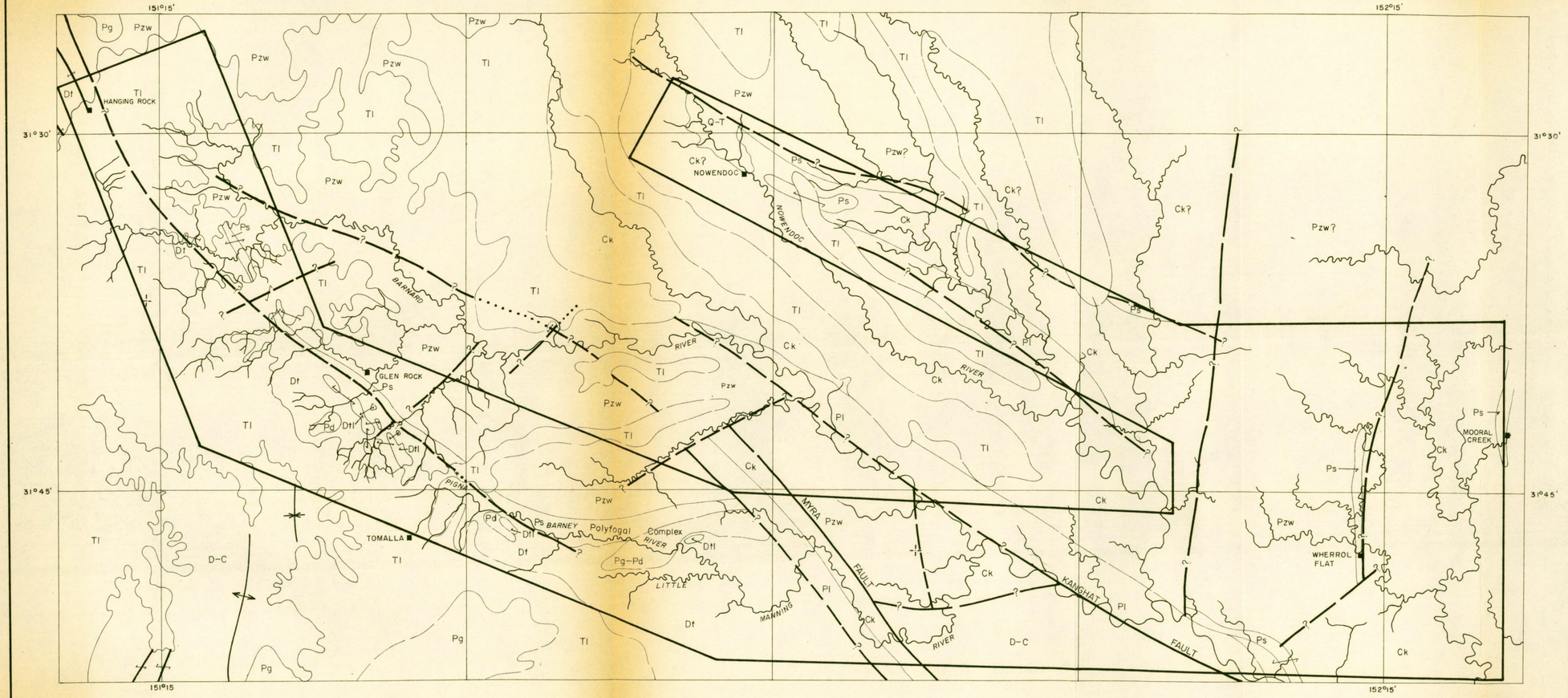
The Central Complex consists of steep dipping Ordovician, Devonian, Silurian, Carboniferous and Permian rocks which are folded, fractured and intruded by acid to basic, plutonic igneous rocks of Late Paleozoic to Early Mesozoic age. The rocks are steeply dipping, highly deformed, metamorphic and metasomatic siliceous or silicified sediments. Some banded gneisses and schists occur though slates and phyllites are more common. Associated jaspers, cherts and quartzites are also found.

The Central Complex is bounded on the west and south by the Great Serpentine Belt or Line, a term Benson (1913) used to delineate discontinuous serpentinite bodies presumed to be emplaced in an arcuate west to west-north-west trending belt along fractures in the Paleozoic rocks from Curricabark to Warialda (Pl. 2). The Serpentine Belt over much of its length follows the Peel Thrust

(Voisey 1958, p 194). The Great Serpentine Belt was presumed to separate a more highly disturbed and older (Lower to Middle Paleozoic) "Eastern Series" from the less disturbed Middle-Upper Paleozoic "Western Series". The age relationships of sediments associated with the Great Serpentine Belt are no longer valid as highly deformed and silicified rocks of Lower Paleozoic to Upper Paleozoic periods have been observed in the Central Complex. The Complex remains a broad Tectonic Unit because of the overall nature of deformation and metamorphism undergone by rocks within it. To the east of the Central Complex and Eastern Serpentine Belt was recognized by Voisey (1958) but this is poorly known.

Serpentine apparently occurs in fractures which are believed by Voisey (1958, p. 19 & p. 196) to be major thrusts. Voisey (1958, p.195) records the main fault of the Great Serpentine Belt at Nundle as dipping easterly at 60^{o}. The fault planes are not always seen and the Serpentine occurs as narrow linear lenses which when examined in detail have somewhat irregular contacts, possibly relating to post-emplacement movements, and siliceous or ferruginous metasomatism.

Voisey (1958, p. 196) recognized a number of faults of apparent large displacement, and inferred them to be transcurrent in character, affecting the eastern margins of the Central Complex. Amongst these were the Manning River Fault System, best expressed by one member the Kanghat Fault, which separates Devonian from Permian Strata near Wingham. Large faults with west-northwesterly to northwesterly trends appear to influence the grain of the country and slivers of



GEOLOGIC SKETCH MAP

UPPER MANNING REGION

PREPARED BY GEOPHOTO RESOURCES CONSULTANTS
BRISBANE

FOR

PLANET MINING PTY LTD

SCALE = 1:250,000

2 1 0 2 4 6 MILES

Transverse Mercator Projection — NOV. 1967

STRATIFIED UNITS

UNDIFFERENTIATED CAINOZOIC	Q-T	Alluvium
TERTIARY	Tl	Liverpool Range Basalts
PERMIAN	Pl	Chiefly lutites
CARBONIFEROUS	Ck	Kullatine Formation
DEVONIAN — CARBONIFEROUS	D-C	Mudstones
DEVONIAN	Dt	Tamworth Group
	Dtl	Tamworth Group Limestones
UNDIFFERENTIATED OLDER PALAEOZOIC	Pzw	Woolomin Beds

INTRUSIVES

Pg	Granitic Intrusives
Pd	Diorite Intrusives
Ps	Serpentinite and associated Ultrabasic Intrusives

GEOLOGIC SYMBOLS

- Contact, dashed where indefinite
- Anticline
- Syncline
- Fault, normal or reverse — Dashed where indefinite, dotted where concealed, questioned where inferred

Plate 3

Permian and Carboniferous and older Paleozoic rocks with strikes trending parallel to the faults dominate the tectonic framework. (See Pl. 3 and aeromagnetic maps).

To the south of E.L. 73 the structural grain of country, expressed in major faults, fold axes and strikes of strata trends north and is strongly transverse to the Manning River area structural grain.

STRATIGRAPHY

INTRODUCTION

The stratigraphic units recognized to the northwest (modified from Crook, 1961) and to the east (modified from Voisey 1939 and 1940) are set out on Tables 1 and 2. There are some marked stratigraphic differences between the two areas and the units recognized by Geophoto within the permit area are listed, and their broad distribution outlined, on Pl. 3. The stratigraphy will be discussed in more detail in the photogeological report.

LITHOLOGY IN RELATION TO MINERALISATION AND GEOCHEMICAL AND MAGNETIC DATA

The following summary of the lithological and petrological character of rock units is given as a guide to the interpretation of magnetic and geochemical anomalies and false anomalies within the permit, and as a guide to the potentialities of various units as hosts or associates of ore.

TABLE 1.

STRATIGRAPHY OF NORTHWESTERN EXTENSIONS OF EL.73

	Rock Unit	Old Nomenclature	Lithology
Quaternary			Transported alluvial and eluvial clays, sands and gravels, and residual soils.
Tertiary	Liverpool Range Basalts		Basalt, teschenitic, overlying and alternating with fluviatile conglomerates, grits and shales
Permian	Andersons Flat Beds		Black, calcareous, poorly sorted lithic arenite.
Carboniferous	Currabubula Fm.	Upper Kuttung Series	Lithic sandstone, conglomerate and glacigene sediments; volcanics.
	Merlewood Fm.	Lower	Lithic sandstone, conglomerate, carbonaceous strata; volcanics
	Namoi Fm.	Burindi Series	Black mudstone, sandstone; weathering olive-green.
	Tulcumba Ss		Sandstone.
Upper Devonian	-Unconformity -		
	Tangaratta Fm.	Barraba Series	Feldspathic sandstone and dark laminated mudstones
	Mandowa Mudstone		Mudstones and lithic sandstones, greywacke conglomerate
	-Unconformity -		
	Baldwin Fm.	Baldwin Series	Laminated lutites and greywacke conglomerate and breccia.

	Rock Unit	Old Nomenclature	Lithology
Middle Devonian	Tamworth Group	Tamworth Series	Siliceous black and grey cherts, cherty siltstone, greywacke, limestone and greywacke breccia.
Silurian and older	Woolomin Beds	Woolomin Series ("Eastern Series")	Massive jaspers, altered spilites, schists, lithic sandstones and tuffs, slates, phyllites.

TABLE 2.

STRATIGRAPHIC SEQUENCE ON THE EASTERN EXTENSIONS OF EL.73

Age	Rock Units - Old Nomenclature (after Voisey)	Lithology
Quaternary		Alluvial and eluvial deposits of present and past river systems.
Tertiary		Basalts (Comboyne Plateau) and alluvial deposits.
Triassic	Camden Haven Series	Conglomerates, quartz sandstones and purple and grey plant bearing shales
Permian	"Kamilaroi" - Macleay Seriea	Poorly sorted, dark mudstones, banded mudstones and sandstones, limestones and cherts.
Carboniferous	Kullatine Series	Polymictic, dark, pebbly mudstones, and mudstones and sandstones; possibly glacigene. Marine fossils.
	Upper Burindi Series ("Taree Limestone" and associated beds)	Grey and brown, massive, oolitic and crinoidal limestone, calcareous shales, mudstones and sandstones.
	Lower Burindi Series	Dark, mudstones (weathering olive green) and lithic sandstones; marine fossils.
Devonian		Blue spilites, greywackes and cherts. Blue and black banded claystones, banded cherts, and greywackes.
Lower Paleozoic (Silurian and older		Jaspers, red and green and light grey quartzites.

Woolomin Beds

The Woolomin Beds comprise a rock complex in which fossils of Ordovician and Silurian Age have been recorded. Crook (1960) summarises the state of stratigraphic nomenclature relating to these beds at that date. The Woolomin Beds as mapped by Geophoto, comprises slates, phyllites, siliceous sandstones, green and red cherts, spilitic lavas and massive, red jaspers, often in blocks bounded by serpentinites emplaced in fault zones. Some crystalline and banded gneisses are recorded. Some rocks, included at this date in the Woolomin Beds, may be altered Devonian, Carboniferous and Permian rocks that have been highly deformed by tectonic stresses and metasomatised locally by chemical changes related to granitisation in place or serpentinisation.

Possibilities of Syngenetic Mineralisation

The Woolomin slates, phyllites and siliceous rocks are possibly altered eugeosynclinal sediments. Stratiform manganese deposits with complex Mn silicate and oxide assemblages are common throughout the outcrop area and are presumably syngenetic. Their only current economic interest is as a source of lapidary "gem" stones, and several small mines are being worked for this purpose. Sulphides, largely pyrite, are common in some of the slates.

Elsewhere in northern N.S.W. copper-zinc and manganese deposits are found near Bingara and Barraba which are attributed genetically to chert-jasper-basic rock associations. Such associations are present in the Woolomin sequence as well as the Devonian units.

Epigenetic Mineralisation

Quartz veins, carrying gold and copper sulphides are common within the outcrop areas of this unit and gold placers have been worked in these rocks.

The red jaspers are haematite-chalcedony rocks, and supergene processes have resulted in the natural beneficiation or iron oxides. The higher grades of haematite are however extremely small in extent.

Geochemical Response

Some basic rocks within the Woolomin unit, and the common vein and other sulphides may contribute to a greater concentration of base metals in stream sediments than would normally be expected.

Magnetic Response

The Woolomin Beds generally have a moderate response to the air-borne magnetometer. The outcrop areas showing values ranging from 900 - 1200 ɣ above the base value of 56,000 chosen for the Manning Project. Within this range the higher values may be due :

1. The influence of neighbouring serpentinite bodies.

2. The influence of neighbouring basalt bodies or small basalt outliers.

3. Iron content of massive jaspers.

4. Spilitic or other basic rocks.

Tamworth Group

This unit comprises dark grey, grey green or grey blue siliceous lutites, banded cherts and lithic greywackes with organic limestone lenses (reefs) and greywacke breccia. Basic (spilitic) lavas and dolerite intrusives are held to be penecontemporaneous with sedimentation. Crook (1961) has detailed the stratigraphy of the unit to the northwest of the mapped area and cross sections suggest that his units follow through into the permit area.

Mineralisation

No syngenetic, stratiform deposits of significance have been recognized but sulphides (pyrite) are abundant in many of the rock units.

Epigenetic deposits include abundant quartz veins, some carrying rich (to 4 oz.) gold values in places. These have yielded small production in the southern areas of the permit. Copper and other sulphides are associated with the gold in the quartz veins, but these offer no great potential for purely base metal production. The limestones of the Tamworth Group where in contact with intrusive rocks (diorites) have been metasomatised with the production of high grade,

skarn magnetite bodies, as at Wright's Marble Prospect, Wharton's property, Pigna Barney River. These deposits are of small tonnage. No significant sulphides have yet been observed to be associated with these skarns.

Geochemical Response

The abundance of basic and intermediate layered rocks and intrusives and frequent sulphide mineralization associated with gold in quartz veins may be expected to yield higher than normal copper concentration in stream sediments draining the general area of the Tamworth Group.

Magnetic Response

As expected from the magnetite content of the individual formations, and members comprising the Group, air magnetic lows appear over limestone reefs and contrast with the higher values of the non-carbonate sections. Intermediate to basic intrusives of later age also produce magnetic highs within the general outcrop area of the Tamworth Group.

Kullatine Formation

This rock unit comprises greywacke conglomerates ("tillites" of Voisey) and dark mudstones, often weathering olive green or brown.

The rocks are highly pyritic, but no significant syngenetic or epigenetic ores are known to be associated with these rocks. Geochemically they yield low values for base metals, of the order of 0-30 ppm for Copper and Nickel.

Permian Rocks

The Permian lutites and associated sandstones and conglomerate have been confused in the past with older rocks of Devonian and Carboniferous age ("Barraba" and "Burindi Series"). They are ill-sorted, and probably glacigene in character. They are highly pyritic and weather with the production of gypsum and sulphur bloom on joint and bedding interfaces. No economic metalliferous mineralization has been recorded in these rocks though there is no reason why structural factors or associations with intrusives may not have led to epigenetic mineralization, as with Permian strata in the New England District.

Geochemically sediments from streams draining the Permian strata show the lowest background range for base metals of any of the major rock units of the Manning District.

The magnetic response of the Permian rocks and the Kullatine Formation are similar. Outcrop areas of both yield values generally ranging from 600 to 900 γ above the chosen base (56,000) for the Manning District.

Liverpool Range Basalts

The only economic interest in this unit is in the possibility of deep leads preserved beneath, and within the basalt section.

The basalt outcrops yield high magnetic values, ranging from 1000 to 2700 by reason of the magnetite content and their high topographic position. Small outliers of basalt are responsible for smaller anomalies in outcrop areas.

Geochemically the basalts are responsible for a moderately high background range for copper in streams draining basalt country.

INTRUSIVES

Dolerite

Dark, fine to medium grained, altered pyroxene-feldspar dolerite frequently intrude concordantly or almost concordantly, the rocks of the Tamworth Group. These are well developed near Tomalla and Glenrock Station and are, in the former place, the host of auriferous quartz veins. The age of the dolerite is not known but they have been regarded as possibly penecontemporaneous to Devonian sedimentation. The possibility exists that they may represent later sill like intrusions. The dolerites yield higher than normal geochemical background for copper, but their aero-magnetic response is not great because of their narrow widths.

Ultrabasic Complexes

Ultrabasic rocks, now altered to serpentinite, occur in five areas within or near E.L. 73. These areas are :

1. From Barry to Curricabark, where sheared serpentine is associated with granular diorite and gabbro and with anorthositic and chromititic segregations. These ultrabasic and basic rocks are situated near granitic intrusions and together these form an igneous complex, referred to in this report as the Polyfogal Complex.

2. About Mt. George, where sheared and less sheared, serpentinite occurs in a west-northwesterly trending belt.

3. About Wherrol Flat in a northerly trending belt.

4. About Mooral Creek in a northerly trending belt.

5. About Nowendoc in a west-northwesterly trending belt.

The serpentinites occur in linear zones and probably occupy faults as they are strongly sheared and marked stratigraphic differences occur on each side of serpentinite outcrops. They form discontinuous, near vertical sheets commonly separated by belts of metasomatised (siliceous and ferruginous) sediments. The outer boundaries of the serpentine are similarly silicified. The metasomatism is probably related to the serpentinisation process. The largest area for Nickel exploration and copper deposits associated with the ultrabasic rocks and for other base and previous metals is the Polyfogal Complex. Further details on petrology, mineralogy and structure of this complex and other serpentinite areas will accompany the final report.

MINERAL OCCURRENCES

Chromitites occur in small segregations in the Pigna Barney area, and are similar to others at Nundle, northwest of the permit area. Small tonnages and the high iron:chromium ratio has in the past inhibited the use of these chromite deposits for other than metallurgical purposes, however, prospects for larger,

and better grade deposits do exist.

No copper-nickel sulphide mineralization is known to date from within the permit. Diorite and gabbroic intrusives of the ultrabasic complexes have magnetite skarns at the contacts.

The serpentinite at Polyfogal has at its boundary a linear, steeply-dipping body of siliceous haematite, which may be a metasomatic deposit related to serpentinisation, or may be a legacy of contact metasomation at the time the original ultrabasic intrusive was emplaced.

Quartz and other thin mineralized veins and shears cut the serpentinite belts and many have associated Gold and Copper sulphides. In themselves the quartz vein occurrences observed do not offer major prospects of workable ores but the narrower cupriferous veins replacing shears present possible "leakage haloes" about buried ore.

Granite Intrusives

Granitic, adamellitic, quartz diorite and aplitic bodies occur in the Tomalla District, and beneath the Barrington Plateau. These are Permian in age and are possible associates of ores of the New England type. Little except gold and copper has so far been discovered in their environs. The granitic rocks are characterised by magnetic lows.

SUMMARY OF MAGNETIC RESPONSE OF VARIOUS LITHOLOGIES

Though topography has some influence on the pattern of lines of equal magnetic intensity as drawn on the preliminary airborne magnetic plans, differing lithologies give characteristic values related to the base value as summarised below :

High gamma values	1000 - 2700	Basalt
	1000 - 1500	Serpentinite
Moderate gamma values	800 - 900	Woolomin Beds
	800 - 1000	Tamworth Group generally
Low gamma values	<800	Tamworth Group, limestones; granitic rocks; Kullatine formation, Permian rocks.

A fuller analysis of lithologic and structural reponse will be possible by overlaying airmagnetic data on the 1:50,000 geological sheets in the final report.

STRUCTURAL GEOLOGY

The region is structurally complex and the following is a brief summary of the broader aspects. The area appears to be an imbricated zone, with repeated northwestern (strike) faults which Voisey regards as transcurrent. These faults belong to the Manning Fault System comprising the Kanghat Fault of Voisey (1959); the Myra Fault (Osborne, 1950); and others. In parallel belts along the faults steeply dipping Permian, Carboniferous, Devonian and older strata are disposed and the faults are marked by stratigraphic, lithological and topographic breaks. The faulted outcrop is usually obscured by surficial deposits.

Northerly trending faults are also prominent as indicated both by linear stratigraphic discontinuities and magnetic anomalies. These are inferred to bound blocks of Woolomin Beds, and serpentinite, along or near the faulted boundaries of blocks, as at Mt. George-Wherrol Flat.

The older and middle Paleozoic strata are intensely deformed by folding and fracturing and have near vertical dips. The folding may be isoclinal, with repetition of beds but detailed mapping of minor structures and study of the facings of strata would be necessary to delineate the folds. The Upper Paleozoic strata are intensely disturbed and dip steeply near faults, grading to moderately tight folds with flank dips exceeding 40^{o} away from the faults.

ECONOMIC SUMMARY

The region is sufficiently complex to have any type of deposits inferred to be associated with volcanic exhalative and sedimentary processes as well as those associated with granitic magmas and with basic igneous rocks. There are many prominent lineaments and much structural disturbance.

To date the district has had a history of small gold deposits, won from quartz veins and placers. The possibility of small tonnage, vein-quartz, auriferous deposits remains high. There is no reason why more extensive deposits than have been found to date should not occur.

For base metal deposits the targets that suggest themselves on geological grounds are :-

1. Stratiform, cupriferous sulphides in the Woolomin Beds.
2. Epigenetic deposits, as vein fillings and replacement, or stockworks in sedimentary or igneous rocks.
3. Accumulations of copper-nickel sulphides that may exist in association with ultrabasic intrusives. These show some signs of magmatic differentiation in that heavy accumulates (chromite) and light accumulates (feldspar-rich rocks of the anorthosite type) are known.

4. Thicker soils, over serpentine, though most are in part colluvial, merit some testing for laterite type deposits.

Less prospective from considerations of the scale required in operation, or from geological or mining considerations are :

1. Deposits of lapidary materials rhodonite and possibly chrysoprase.
2. Occurrence of high carbon coals (? anthracite) in tectonic zones. Thin coal seams to 4 inches have been discovered in Permian beds by the writer within the permit. The mining economics of near vertical strata are a deterrent to advising exploration expenditure on the coal.
3. Complex base metal ores including Sb, Bi and Ag might be sought near the granitic bodies.
4. The pyritic greywacke conglomerates should be scanned for radioactive deposits of the Blind River (Algom) and Rand types.
5. Haematite deposits associated with serpentinisation and supergene leaching of jaspers might be possible although observed prospects offer little scope for production.

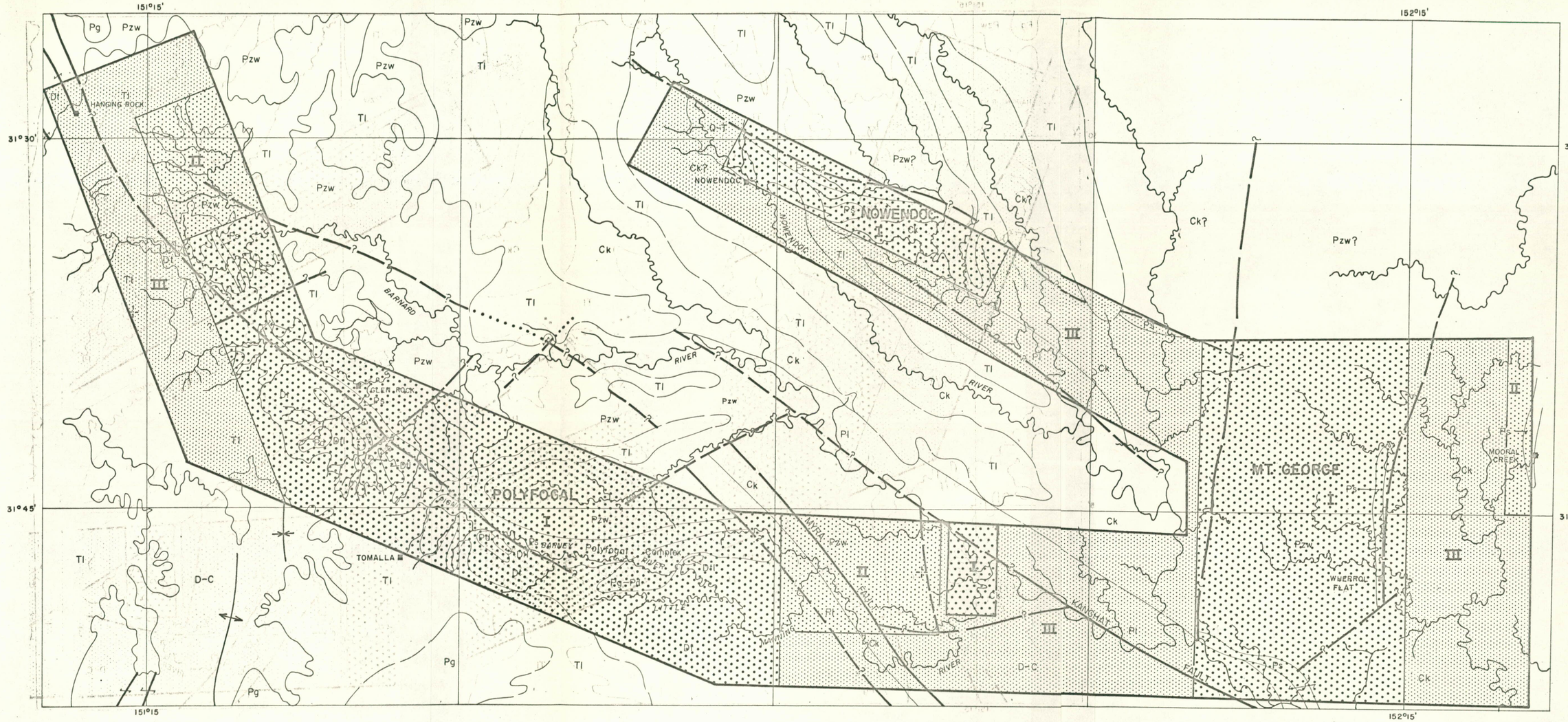
Individual Prospects

The best individual area to prospect as presently known from surface geology is situated between Tomalla and Dewitt Creek. (Plate 4 - Polyfogal). In this region, notably about Wet and Copper Creeks, copper sulphides are known from quartz veins and from thin shears. The latter while offering little scope themselves for production may be useful indicators if it is recognized they may be part of a "leakage halo" from some buried deposit.

This area has shown several areas with high Nickel and Copper stream sediment values during the October survey which when analysed in terms of bedrock and other factors might reveal targets for intensive exploration.

Veins of weakly nickeliferous chalcedony associated with calcite between bedrock and such cappings have some similarities to the chrysoprase associated with serpentinite in the Marlborough District, Queensland.

Selected targets for more intensive exploration and a proposed program relating to these are appended to the Geophoto geochemical report of November, 1967.



I FIRST PRIORITY
II SECOND PRIORITY
III THIRD PRIORITY

SUGGESTED AREAS FOR RETENTION AND PRIORITY IN EXPLORATION EXPENDITURE

SCALE 1/250,000

2 1 0 2 4 6 8 10 12 MILES

PREPARED BY GEOPHOTO RESOURCES CONSULTANTS
BRISBANE

Plate 4

AREAS SUGGESTED FOR RETENTION AND MORE INTENSIVE EXPLORATION

On geological grounds, supported by geochemical data on stream sediments to date, the E.L. 73 Authority has been subdivided into areas with three orders of priority relating to possibility of base metal sulphide occurrences. (Plate 4).

The first order priorities encompass serpentinite and other igneous rocks in linear zones bounding Woolomin beds and other rock units. The surface geology as well as the most interesting geochemical results yet to hand indicate that prospects for Nickel, Copper and other base metals, and also for Gold, lie in these areas. They should be retained for more intensive exploration and geological appraisal. The first order areas are four in number, all more than 10 square miles in size but together containing approximately 50% of the area of the current E.L. 73.

The second order priorities include blocks of Woolomin Beds which might repay some further attention and also a small part of the Mooral Creek serpentinite which largely lies on the border or beyond the border of the permit area.

In the state of current mapping and structural knowledge no ground in the permit can be considered completely unprospective but the areas of Tertiary Basalt and of Upper Carboniferous and Permian rocks have been classed as of third order priority and recommended for relinquishment on present geological and geochemical knowledge.

Respectfully Submitted,
GEOPHOTO RESOURCES CONSULTANTS

J. H. Rattigan

Dr. John H. Rattigan,
Senior Minerals Geologist.

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