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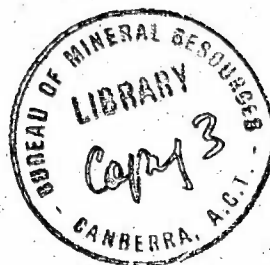
DEPARTMENT OF  
MINERALS AND ENERGY



BUREAU OF MINERAL RESOURCES,  
GEOLOGY AND GEOPHYSICS

Record 1974/52

BMR 1974 PROGRAM



by

A. Driessen

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BMR  
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1974/52  
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## NOTES

The program does not list the preparation of BMR Records (unpubl.) on the results of current projects; however, it can generally be assumed that such Records will be prepared for most projects. A list of Records released on Open File is brought out regularly by BMR.

The dates given in brackets after each field operation refer to time actually spent in the field. In most cases office work on the project continues to the end of the current year or early in the following year.



## CRUSTAL STUDIES

### Heat Flow Studies

Continue collation of heat flow data on the Great Artesian Basin for computer processing and compilation of heat flow maps.

### Reconnaissance Helicopter Gravity Survey, Southeastern Australia.

Complete gravity coverage (by contract) of south-eastern Australia; recordings over the mainland are at approximately 11 km gridpoint intervals, over Tasmania at 7 km intervals, while coverage of Bass Strait is restricted to readings on offshore drilling platforms and islands (Jan-May). This survey is the final stage in providing gravity coverage of Australia at a station density of one per 125 km<sup>2</sup> or better.

### Gravity Map of Australia

Continue compilation and preparation of free air and Bouguer anomaly maps of Australia at 1:2 500 000 scale. This work includes continual development of ADP programs to recompute gravity data from early BMR and company surveys and for storage and retrieval of gravity data. Publication is scheduled for 1976 to coincide with the International Geological Congress.

Maintain gravity data files for use by BMR, industry and other organizations. Maintain and check gravity meters.

### Australian Calibration Line

Take precise measurements of gravity at Hobart and Port Moresby for correlation with values at Potsdam; a co-operative project with the Geophysical Committee of the Soviet Academy of Sciences, University of Tasmania, and Port Moresby Geophysical Observatory (Nov).

### Earth Tides - Deflection of the Vertical

Operate horizontal pendulum apparatus for continuous measuring of solid earth tides to determine elastic properties of the earth. The equipment is installed in a mine tunnel near Armidale and is operated jointly with the University of New England.

### Lake George Gravity Survey, NSW

Record gravity observations at approximately 200 stations over the dry lake bed and surrounds to investigate the thickness of sediments in the lake and features of the Lake George Fault.

Aeromagnetic Map  
of Australia

Produce aeromagnetic map of Australia at 1:2 500 000 scale from all available aeromagnetic data; some fill-in survey flying to be undertaken by BMR aircraft.

Supervise contracts for flying of control network and for compilation of regional magnetic data and map production.

Isomagnetic Survey of  
Australia and  
Surrounds

Re-occupy 1st order magnetic (D) stations at Neale Junction/Decca Airport (WA), Christmas Island, Cocos (Keeling) Islands, Willis Island (Qld), Lord Howe Island, Norfolk Island, Honiara (Solomon Islands), Vanimo (PNG) and stations in the Prince Charles Mountains, Antarctica (Jan-April). Observations are required for completion of the Isogonic Map of Australia by 1975.

Third Order Magnetic  
Surveys

Provide 3rd order magnetic coverage, using helicopters, of the more remote and inaccessible portions of eastern WA, central, southwestern and southeastern NT, and northwestern and northeastern SA. (June-Sept). This work will virtually complete coverage of Australia. Density of stations is approximately one per 730 km<sup>2</sup> or 24 per standard 1:250 000 Sheet area.

Take 3rd order magnetic measurements in Prince Charles Mtns, Antarctica.

Marine Magnetic Recordings  
on NATMAP Surveys

Organize and support magnetic surveys on Division of National Mapping bathymetric surveys.

Continental Margin  
Survey

Analyse and report on results of the contract marine geophysical survey of the Australian continental margin; the survey provided seismic, gravity, magnetic, and bathymetric data along lines 30-40 km apart between the 20 m and 4000 m isobaths, and determined on a reconnaissance basis the geological and bathymetric nature and extent of the Australian continental margin.

Develop ADP programs for the processing, interpretation, and display of survey data.

Seismic Array Surveys,  
Northwestern WA

Carry out seismic array surveys in northwestern WA, using mine explosions, to investigate the seismic characteristics of Archaean rocks of the area.

Seismograph Stations -  
Canberra Group

Maintain and calibrate stations for 3-component SP reading at Alice Springs and Manton (NT); install SP-Z seismographs at Giles (WA) and study feasibility of installing stations at Mt Isa and Armidale.

Strong Earth Motion  
Studies - Canberra Group

Maintain accelerograph networks; install accelerograph in the Dalton/Gunning region.

Measure ground accelerations near large explosions; carry out field studies of damaging or felt earthquakes as required.

Seismology Data  
Processing and  
Reductions - Canberra  
Group

Prepare phase and epicentral data tapes for the International Seismological Centre and produce monthly phase and time sorted bulletins; maintain regional earthquake data files and prepare seismicity maps. Seismological data processed by BMR are also contributed by Australian National University, Universities of Tasmania, Adelaide, and Brisbane, and Rabaul and Honiara.

Melbourne (Toolangi)  
Observatory Group

Record, analyse and report on geomagnetic and seismic observations at the observatory and process seismic data from Bellfield Reservoir, Melbourne, Broken Hill and Norfolk Island.

Continue the normal program of SP-Z recording at Bellfield Reservoir and Norfolk Island; resite Melbourne station at a quieter site east of the city.

Take accelerograph recordings at the Melbourne station; carry out field studies of felt or damaging earthquakes as required and record aftershock tremors.

Mundaring Observatory  
Group

Continue the standard program of recording, analysing and reporting on geomagnetic, seismic, and ionospheric observations made at the observatory; train personnel for Antarctic projects.

Mundaring Observatory  
Group (contd)

Continue the normal program of SP recording at Kalgoorlie, Meekatharra, Kununurra, and Marble Bar; install seismographs at Swan View and Wagin.

Carry out micro earthquake studies and short term SP and accelerograph recordings in the Meckering earthquake zone; carry out field studies of felt or damaging earthquakes as required.

Take 'opportunity' seismic refraction recordings of various mine blasts to study P wave residuals and travel times.

Instal USGS Seismological Research Observatory in bore hole approx. 150 km south of Mundaring, WA and provide telemeter link to Mundaring.

Port Moresby  
Observatory Group

Record, analyse and report on geomagnetic and seismic observations made at the observatory (ionospheric recording has been suspended pending replacement of ionosonde); maintain the PNG seismicity file.

Operate SP seismographs at Wabag, Lae, Momote, Talasea, Kavieng, Kobuan, Vanimo, and Madang; study feasibility of installing a seismic station in the Star Mountains area.

Maintain accelerographs at Port Moresby, Lae, Musa Damsite, Ramu Damsite, Wewak, Rabaul, Frieda River, and Star Mountains; carry out field studies of significant earthquakes and record aftershock tremors.

Macquarie Island  
Observatory

Record and analyse geomagnetic and seismic observations; operate tide gauge and micro-pulsation recorders for Flinders and Alaska Universities.

Mawson Observatory

Record and analyse geomagnetic and seismic observations.



Geomagnetic Data  
Processing and  
Reductions - Canberra  
Group.

Maintain Australian Geomagnetic Standards;  
convert magnetic results to IAGA format. Prepare  
Geophysical Observatory Report (Vol. 22) for  
distribution.

Am	Aeromagnetic
D	Drilling (stratigraphic)
GM	Geological Mapping
Gm	Geomorphology
Pal	Palaeontology
R	Radiometric
Sed	Sedimentology
S	Seismic

Sed, D

## SEDIMENTARY BASINS

### Carpentaria Basin, Qld

Provide aeromagnetic and radiometric coverage of Torres Strait (partly), Jardine River, Orford Bay (pt), Weipa, Cape Weymouth, Aurukun, Coen, Ebagoola (pt), Rutland Plains, Hann River, Cooktown, and Red River 1:250 000 Sheet areas at 1.5, 3.0, and 6.0 km line spacing (May-Nov)

Carry out auger drilling for geological information in areas of poor outcrop and for testing areas of ground water potential as indicated by resistivity surveys (June - Oct)

Carry out resistivity survey south of Weipa to investigate aquifers in Cainozoic sequences.

Prepare 1:1 000 000 Preliminary map of northern part of the Basin and prepare Report to accompany 1:1 000 000 map of southern part of the Basin.

Prepare outstanding Preliminary and First Edition 1:250 000 maps as detailed in the Publications listing.

### Northern Eromanga Basin, Qld

Prepare 1:1 000 000 First Edition map and Notes

### Western Eromanga Basin, Qld

Prepare 1:1 000 000 First Edition map and Notes.

### Central Eromanga Basin, Qld

Prepare Report and isopach maps.

### Surat Basin, Qld

Prepare 1:1 000 000 First Edition map and Bulletin on geology of the Basin; prepare Bulletin on the lower Cretaceous palynology of the Basin.

### Galilee Basin, Qld

Prepare report on the taxonomy of Permian miospores.

### Southwest Queensland Geomorphology

Continue studies on the relation of geomorphology and deep weathering profiles to geology as the basis for the interpretation of Cainozoic structural movements; a co-operative study with the University of NSW.

Lake Frome, SA

Study metal precipitation in an inland drainage basin; a joint project with ANU, SA Mines Dept and Baas Becking Laboratory.

Eucla Basin, SA

Prepare Bulletin on 1970 and 1972 airborne surveys.

Officer Basin, WA

Supervise aeromagnetic contract providing coverage of Browne, Bentley, Scott, Robert, Yowalga, Talbot, Cooper, Throssell, Westwood, Lennis, Waigen, Neale, Vernon, Wanna, Jubilee, and Mason at 1.5 and 3 km line spacing.

Study Permian and Tertiary palynostratigraphy of the Basin; also a contribution to Permian Period studies.

Prepare 1:1 000 000 map and Bulletin.

Prepare outstanding Preliminary and First Edition 1:250 000 maps as detailed in the Publications list.

Carnarvon Basin, WA

Study Upper Palaeozoic conodont faunas to assist GSWA 1:250 000 mapping project (June-July).

Carry out systematic and stratigraphic studies of Tertiary foraminifera.

Canning Basin, WA

Map Noonkanbah 1:250 000 Sheet area; a joint project with GSWA (June-Sept).

Study sedimentological aspects of Devonian and Carboniferous units.

Prepare outstanding Preliminary Edition 1:250 000 maps as detailed in the Publications listing.

Prepare isochron, structure contour, isopach, and lithofacies maps of selected areas.

Collect vertebrate material from the Dulcie Sandstone and Cravens Peak Beds.

Prepare publications (mainly palaeontological) as detailed in the Publications listing.

Browse, Bonaparte Gulf, and  
Money Shoal Basins, WA

Commence review and correlation of geophysical and geological data.

Melville Island -  
Cobourg Peninsula, NT

Carry out systematic palaeontological studies of lower Carboniferous ostracods from the Bonaparte Gulf Basin.

Carry out shallow stratigraphic drilling as follow up to previous years' 1:250 000 scale mapping.

Investigate heavy mineral occurrences and study their stratigraphic control.

Prepare outstanding First Edition 1:250 000 maps and Notes as detailed in the Publications listing.

Wiso Basin, NT

Carry out shallow stratigraphic drilling and reconnaissance traverses in preparation for the 1975 mapping program (Aug-Nov).

Georgina Basin, NT

Study lower Palaeozoic carbonate rocks and faunas; field map critical sections in the southeastern portion of the Basin. This work includes a study of primitive molluscs by a USGS exchange Fellow.

Carry out shallow stratigraphic drilling (June-Aug).

Ngalia Basin, NT

Prepare Bulletin and 1:500 000 geological map prepare Bulletin on Tertiary pollen from the Basin.

Amadeus Basin, NT

Study stromatolite biostratigraphy and microfossils associated with stromatolites.

Quaternary Eustasy  
Studies

Carry out shallow seismic survey of the continental shelf off northern NSW; test deep water free fall sampling equipment during cruise (Nov-Dec).

Carry out shallow stratigraphic drilling in the Coorong area of South Australia to assess the value of this area for Quaternary eustasy studies (Oct-Nov).

Palaeontological Studies

Study palynological material from Ngalia, Officer, and Eromanga Basins to determine stratigraphic and palaeoclimatic conditions of the Tertiary period.

Carry out Silurian and Permian period studies.

Continue fluorescent palynological work on Recent and Tertiary pollens; study comparative systematic palynology and stratigraphy of marine Cretaceous microplankton of eastern, southern and western Australia.

Continue search for Tertiary fossil mammals in South Australia and at Nerriga, NSW; study systematic palaeontology of fossil mammals from Bullock Creek, Riversleigh, and PNG.

Continue preliminary descriptive work on Devonian vertebrate faunas from Taemas/Wee Jasper NSW, Canning Basin WA, and Amadeus Basin NT.

Study systematic palaeontology of Dikelocephalinid trilobites, Ordovician ichnolites and Cambrian molluscs from central Australia.

Provide general support for mapping projects and prepare publications as detailed in the Publications listing.

#### Petrochemical Studies

Continue studies in the diagenesis of organic material in relation to oil and gas occurrences specifically from the Northwest Shelf and the Amadeus Basin.

Continue comparative studies of the various parameters used to measure organic diagenesis; a continuation of 1973 studies of kerogens and phosphorites. Study the role of micro-organisms in the generation and alteration of petroleum precursors; a joint project with Baas Becking Laboratory Group.

Carry out routine analyses and testing of gas, oil, and bitumen samples.

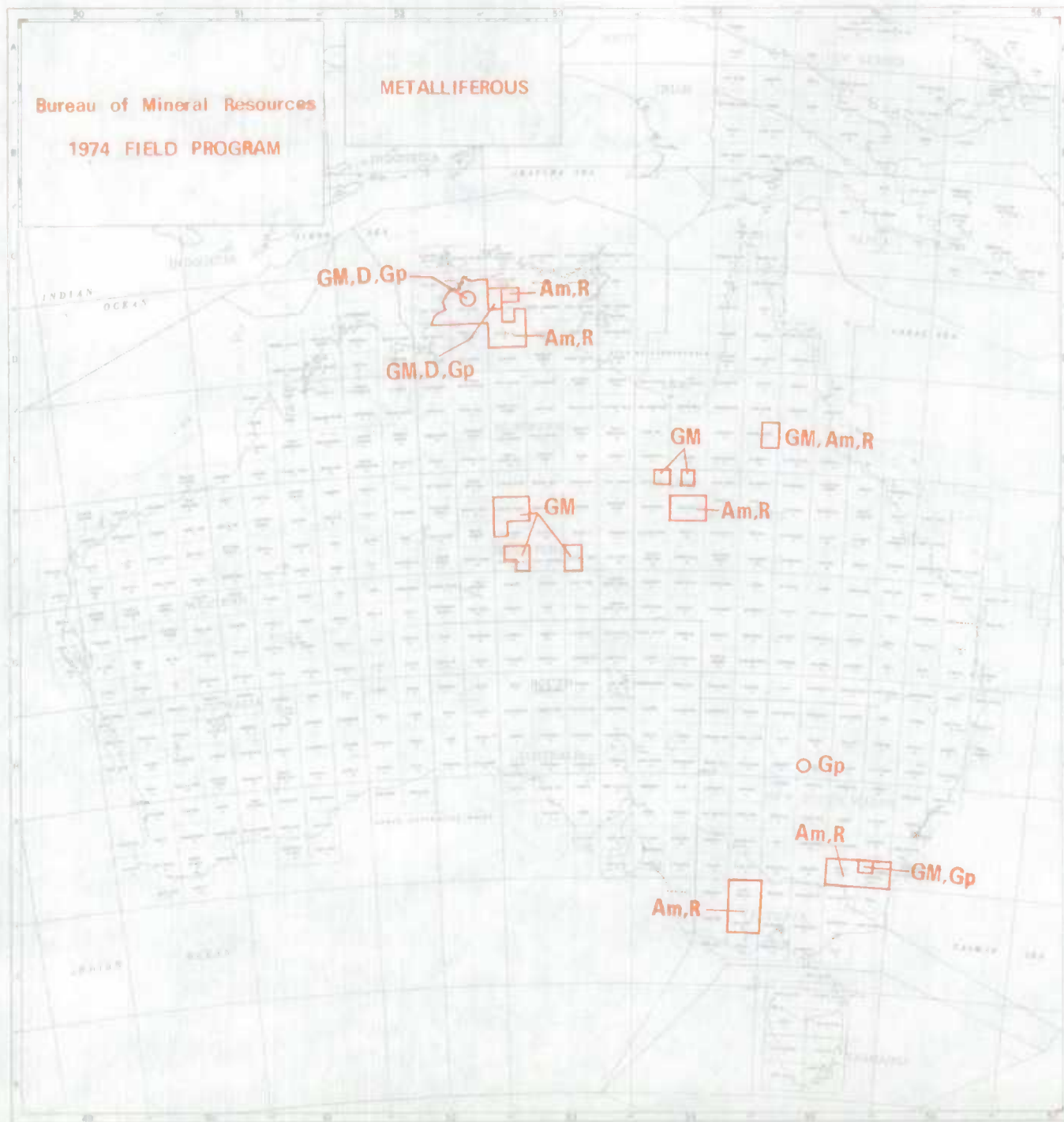
#### Petrophysical Investigations

Carry out porosity, permeability, density, fluid saturation, pore size distribution, and capillary pressure analyses of petroleum reservoir rocks; core samples are obtained from wells drilled under the Petroleum Search Subsidy Act and Petroleum (Submerged Lands) Act and from State Mines Departments, private companies, and BMR parties.

Reservoir Engineering  
Studies

Carry out thermodynamic (PVT) studies of hydrocarbons for determination of oil bubble point, dew point of gas condensate, oil and gas formation volume factors, reservoir oil and gas compressibility, reservoir gas, oil and water compressibility, fluid densities, and solution gas and oil ratios. Study the recovery of petroleum reservoir fluids at simulated reservoir temperatures.





**LEGEND**

Am	Aeromagnetic
D	Drilling (stratigraphic)
GM	Geological Mapping
Gp	Detailed Ground Geophysics
R	Radiometric



## METALLIFEROUS AREAS

### Georgetown, Qld

Complete geological mapping and stream sediment geochemical sampling of Forsayth and Georgetown 1:100 000 Sheet areas (May-Sept).

Study the geochemistry, geochronology, and associated mineralization of acid igneous rocks of north eastern Queensland, particularly the mineralized granites of the Herberton and Mount Garnet region.

Prepare Preliminary and First Edition 1:100 000 maps as detailed in the Publications listing.

### Westmoreland, Qld

Study the petrology of granites and volcanics of the region; complete petrological and geochemical studies of the Clifdale Volcanics and the Norris and Nicholson Granites.

Prepare Preliminary and Second Edition 1:250 000 and 1:100 000 maps as outlined in the Publications listing.

### Mount Isa - Cloncurry, Qld

Map Precambrian rocks of Kennedy Gap 1:100 000 Sheet area and complete mapping of Quamby 1:100 000 Sheet area; a co-operative project with GSQ (May-Sept).

Provide aeromagnetic and radiometric coverage of Duchess 1:250 000 Sheet area at 1.5 km line spacing (Oct-Nov).

Continue petrological and geochemical studies of basic igneous rocks of the region; continue geochronological investigations.

Prepare Preliminary and First Edition 1:100 000 maps and other publications as detailed in the Publications listing.

### Lachlan Geosyncline, NSW and Vic

Complete geological mapping of Brindabella 1:100 000 Sheet area (Jan-April); study and describe the palaeontology and stratigraphy of the ACT and surrounding areas.

Provide aeromagnetic and radiometric coverage of Wagga and Canberra 1:250 000 Sheet areas in NSW and of St. Arnaud and Ballarat 1:250 000 Sheet areas in Victoria. (April-May).

Prepare Preliminary Edition 1:100 000 maps detailed in the Publications listing.

Granites-Tanami,  
NT, WA

Prepare 1:500 000 map and Bulletin; prepare Preliminary and Second Edition 1:250 000 maps and Notes as detailed in the Publications listing.

Kimberley Basin, WA

Prepare Kimberley Basin and West Kimberley 1:500 000 maps and Bulletins.

Victoria River Basin,  
NT

Prepare 1:500 000 Preliminary Edition map and Bulletin.

Alligator River, NT

Map Kapalga and Mundogie 1:100 000 Sheet areas; study the petrology, geochemistry, and geochronology of granites and volcanic rocks, particularly their relationships with uranium, base metal, and gold mineralization. This work is to be supported by a shallow stratigraphic drilling program of 70-80 holes to 150 metres (June-Oct).

Provide aeromagnetic and radiometric coverage of Darwin, Fog Bay, Cape Scott (all partly), Pine Creek, Mt Evelyn (pt), and Katherine 1:250 000 Sheet areas at 1.5 km line spacing; carry out detailed aeromagnetic and radiometric survey of the Koolpin Formation at 0.2 km line spacing (June-Oct).

Establish reconnaissance ground geophysical techniques to detect marker horizons in un-metamorphosed Koolpin Formation, apply optimum techniques to establish the relationship between Koolpin Formation exposed near Barramundi Creek and postulated Koolpin Formation extending northwards from the Jim Jim 1:100 000 Sheet area (Aug-Oct).

Prepare Preliminary and Second Edition 1:100 000 and 1:250 000 maps and Bulletin as detailed in the Publications Listing.

Rum Jungle, NT

Carry out field checks for revision of the Rum Jungle Special Geological Map (1:63 360); investigate the genesis of base metal deposits of the area - a co-operative project with the Baas Becking Laboratory. This work is supported by a shallow stratigraphic drilling program of 15-35 holes to 70 metres maximum depth (May-Oct).

Carry out a gravity survey to obtain regional information on granite-metasediment relationships and on differential relationships within the metasediments; carry out resistivity and E M surveys over selected gravity traverses to develop methods for delineating the Coomalie Dolomite-Golden Dyke Formation boundary (May-Oct).

McArthur Basin, NT

Study stromatolite biostratigraphy and microfossils associated with stromatolites.

Prepare Bulletins as listed in the Publications listing.

Tennant Creek, NT

Continue geochemical laboratory studies of mineralization characteristics of the Tennant Creek field; prepare Bulletin.

Review geophysical data; provide geophysical logging facilities for NT Mines Branch drill holes; carry out density and susceptibility measurements on available drill core.

Arunta Block, NT

Map Nawietooma, Anburla, Denison 1:100 000 Sheet areas and Mt Peake 1:250 000 Sheet area (May-Oct); mapping of the McDonnell Ranges 1:100 000 Sheet area is being carried out by Monash University and a reconnaissance survey of the Quartz and Limbla 1:100 000 Sheet areas is to be carried out co-operatively with Macquarie University.

Study petrology of basic granulite rocks from central Australia; continue geochronological work.

Prepare 1:100 000 Special Map of the Arltunga Nappe Complex and Bulletin and Preliminary Edition 1:100 000 maps as listed under Publications.

Baas Becking  
Laboratory Projects

Investigate parameters governing the fractionation of stable isotopes during bacterial sulphate reduction; evaluate sulphur isotope ratios as a means of distinguishing between biogenic and non-biogenic sulphides; investigate the evolution of bacterial sulphate reduction.

Investigate the role of organic material in processes leading to metals concentrations; study early diagenetic processes.

Study co-precipitation characteristics of calcium/magnesium carbonates and heavy metal ions; study metal concentration and transport processes in sediments; investigate organo-metallic complexes derived from algal material.

Carry out petrological and geochemical studies of the HYC Member, McArthur River and investigate the genesis of base metal-uranium deposits, Rum Jungle.

Antarctica

Continue geological mapping of selected areas of the Prince Charles-Grove Mountains area; take 3rd order magnetic measurements on traverses and re-occupy 1st order magnetic stations in Prince Charles Mountains.

Prepare 1:500 000 maps and Bulletin on Geology of Prince Charles Mountains.

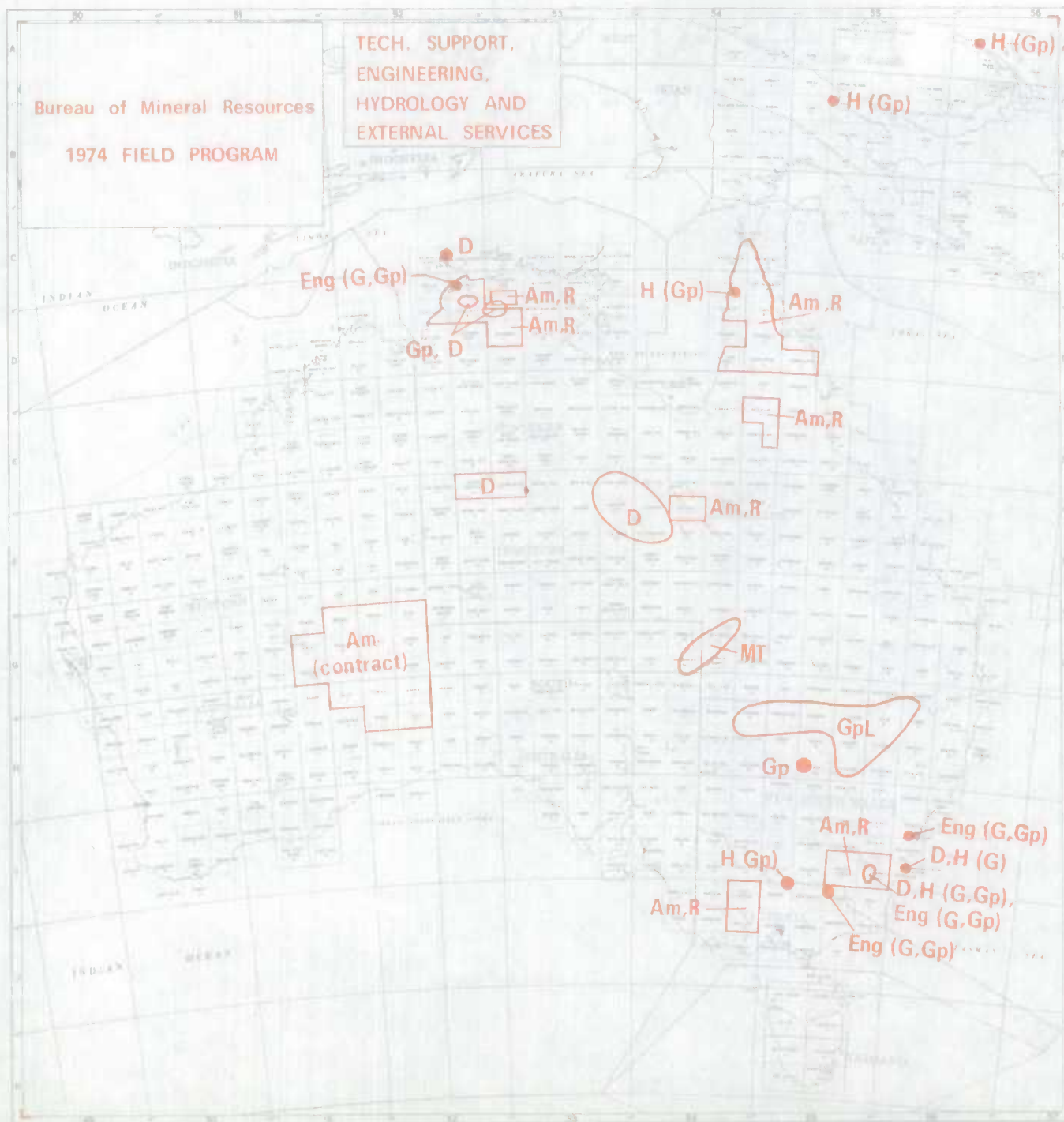
Papua New Guinea

Continue petrological, geochronological and palynological studies of previous years' mapping projects and in support of GSPNG field projects.

Prepare maps, Bulletins and Reports as detailed in the Publications listing.

Bureau of Mineral Resources  
1974 FIELD PROGRAM

TECH. SUPPORT,  
ENGINEERING,  
HYDROLOGY AND  
EXTERNAL SERVICES



LEGEND

Am	Aeromagnetic
D	Drilling (stratigraphic)
Eng (G,Gp)	Engineering (geology,geophysics)
Gp	Detailed Ground Geophysics
GpL	Geophysical Logging (boreholes)
Gr	Gravity
H (G,Gp)	Hydrology (geology, geophysics)
MT	Magneto—Tellurics
R	Radiometric
S	Seismic

## TECHNOLOGICAL SUPPORT

### Marine Systems Development

Analyse and evaluate future system requirements, from data collection through to presentation stages, for the marine program.

Carry out studies on developing high resolution capabilities for shallow seismic profiling system; study compact low energy sparker power supply units, improved sonobuoy for shallow water refraction, bubble suppression devices for energy levels greater than 1000 Joules and techniques for differentiating sediment types from reflected acoustic energy characteristics.

Prepare duplicate analog seismic tapes for loan to industry.

Carry out feasibility studies and market survey of marine coring drill equipment for offshore sampling.

### Seismic Systems

Continue feasibility studies on seismic digital recording systems; prepare programs for processing digital seismic data through BMR mini computers and the Cyber 76. Digitize existing seismic data, well logs and other logs for computer processing.

Design feasibility studies for a camera with independent x and y reduction ratios for reducing seismic records.

Develop special non-explosive techniques for shallow seismic refraction investigations in developed areas.

### Gravity Techniques and Equipment

Maintain BMR gravity meters; check private company gravity meters if requested.

Provide training in the use of gravity meters for BMR personnel and other Government Departments.

### Magneto - Telluric Investigations

Study the use of magneto - telluric method in metalliferous areas.

Carry out an experimental M-T survey in the Cooper Basin, SA, to define Cambrian structure below Permian coal horizons, which are generally difficult to penetrate seismically; a co-operative project with Macquarie University (April-May).

#### Time-Domain Methods

Continue general development and testing of time-domain geophysical systems; specific studies are being carried out on digital recording of transient-EM data and on developing methods which may be applied to regional studies. Field tests are programmed for Cobar, Alligator River, and Rum Jungle areas (Jan-Oct).

Continue transient-EM modelling work to develop interpretative techniques.

#### Downhole Geophysical Techniques

Continue development and testing of time-domain IP, applied potential, EM, and magnetic downhole systems; fieldtest methods at Cobar, Woodlawn, Tumut, and the Darwin-Katherine area.

Study instrument feasibility of a downhole IP continuous logging system.

#### Resistivity Techniques

Assess the use of resistivity techniques for groundwater surveys; this work has been requested by AWRC and will largely comprise office studies of case histories on resistivity methods.

#### Magnetic Techniques

Continue studies of continuous magnetic recording techniques to outline areas of igneous intrusion in coal seams; this work has been requested by Queensland Mines Department (Oct).

#### Airborne Systems, Techniques, and Data Reductions

Continue development work on gamma ray survey equipment, methods, and processing and interpretative techniques.

Reduce magnetic digital data from BMR and contract airborne surveys of the current program; develop computer programs to facilitate processing and interpretative techniques.



Rock Measurement

Complete construction of heat conductivity measuring equipment and equipment for measuring sound absorption in unconsolidated sediments.

Install a gamma ray spectrometer for analysis of rock and soil samples.

Develop equipment to measure static Poisson ratios and Young's modules; develop triaxial strength testing equipment.

Study methods of measuring earth strains and of detecting faults in advance of rock tunneling operations.

Observatory Equipment and Maintenance

Provide maintenance and testing support for seismic observatories. Develop and construct seismograph calibration units, observatory timers, remote recording seismographs and playback systems, digital magnetic recording systems, and a magnetogram digitizer.

Drilling Engineering

Provide drilling and drilling support services for BMR operations and, if requested, other Government Departments. Prepare technical specifications for contract drilling operations and purchase or modify new plant and equipment.



## ENGINEERING

Project	Nature of Work
Damsite and Reservoir Investigations, ACT, NSW	Provide geological and geophysical support services to Department of Housing and Construction and/or NCDC projects. Services comprise detailed geological mapping, core and auger drilling, detailed magnetic and resistivity surveys, and shallow seismic profiling; these are presently required for the Googong Dam project, the Tuggeranong Creek damsite investigation, and reservoir site investigations at Belconnen, Woden, Gungahlin and Tuggeranong.
Watermains Investigations, ACT, NSW	Carry out field assessments for DHC and/or NCDC of watermain routes in the Canberra region including one linking the Googong treatment plant to the Canberra water main; assess water reticulation projects at Tuggeranong, Belconnen, and Gungahlin.
Sewer Tunnel Investigations, ACT, NSW	Provide geological and geophysical services as outlined above and make general assessments for DHC and/or NCDC on the Tuggeranong tunnel and appurtenant works, the Tuggeranong connecting sewer project, the Molonglo Valley interceptor, the Mulligans Flat sewer reticulation project, the Canberra City sewer augmentation project, the Belconnen Plant to lower Molonglo Pollution Control Plant tunnel, the Jerrabomberra trunk sewer, and the Harman - Queanbeyan sewer.
Roadworks Investigations, ACT	Provide preliminary assessments and continuing advice to NCDC on the Molonglo - Tuggeranong Parkway Interchange, the Waniassa Arterial Road, the Callinan Arterial Road, and the Eastern Freeway.
Construction Materials Investigations, ACT, NSW	Sample, test, and estimate inferred reserves, by boring and seismic methods, of sand deposits on the bed of the East Basin of Lake Burley Griffin, the Dairy Flat area east of the lake, and various stretches along the Gudgenby River.

Carry out investigations for brickshale, gravel, and aggregate in the Gungahlin area.

**Major Buildings, ACT**

Conduct site investigations and map excavations and provide geological advice as required to the various construction projects in the City centre, Belconnen and Woden town centres, the High Court and Art Gallery sites, the Parliamentary Triangle, and Black Mountain.

**Urban and Regional Development Areas**

Carry out geotechnical studies of hydrology, soil mechanics, and engineering geological constraints, on urban planning and development projects at Tuggeranong, Gungahlin, Isabella Plains, Gooromon Ponds, and areas south of Queanbeyan; contributions to NCDC and Queanbeyan Planning Council projects.

Compile and prepare from existing data a general thematic map at 1:250 000 scale showing soil, rock, and hydrological constraints to regional planning of the Canberra region including Yass, Goulburn, Braidwood, Bredbo, and the Goodradigbee River.

Co-ordinate and provide liaison on hydrology, soil mechanics, and engineering geological constraints, for urban planning projects at Albury - Wodonga, Holsworthy, and Darwin. Involved parties include Cities Commission, NCDC External Projects, Albury-Wodonga Development Corporation, and the Geological Surveys of NSW, Vic and NT.

**Miscellaneous Projects**

Co-ordinate and provide liaison on geotechnical aspects for the Newcastle Dry Dock, Melbourne Dry Dock, and Cairns - Weipa microwave link projects; involved parties include DHC and the Geological Surveys of NSW, Vic and Qld.

Provide training in engineering geology and hydrology to Colombo Plan and UNDP Fellows.

## HYDROLOGY

Project	Nature of Work
Great Artesian Basin, Qld, NSW, SA, NT	<p>Continue the review, collation, and analyses of hydrogeological data of the Basin for construction of a mathematical model of its hydraulic and ground-water characteristics. The Australian Water Resources Council nominated BMR as the co-ordinating body for the study, which is drawing on information held by BMR and relevant State Water Authorities and Mines Departments.</p> <p>Supervise contract geophysical logging programs in areas relevant to this study and log those bores which are unsuitable for letting by contract and which have not been logged by State Mines Departments.</p>
Cape York Peninsula, Qld	<p>Carry out resistivity surveys south of Weipa to investigate aquifers in Cainozoic sequences (May-July).</p>
Murray-Goulburn Rivers Valley, Vic	<p>Continue seismic reflection and refraction survey work in the region to locate shallow aquifers and the base of unconsolidated sediments; a joint project with the Victorian Mines Department and the State Rivers and Water Supply Commission (Feb-March).</p> <p>Carry out experimental resistivity surveys in selected areas and continue experimental studies to assess the value of using conventional marine seismic profiling techniques in irrigation canals (Sept-Oct).</p>
The Australian Capital Territory	<p>Maintain and monitor groundwater characteristics in observation bores in the ACT and Jervis Bay; repair or re-drill Observation Bore U 11 at Jervis Bay.</p> <p>Provide surveillances of Corin Dam and other dams in the ACT; monitor the water level and quality of Lake George; monitor leakage from Lake Windemere. Provide analytical services for Zn monitoring of the Molonglo River system; provide advice and support for the rehabilitation of Captains Flat and the Molonglo River valley upstream of Carwoola.</p>

Study the groundwater regime fractured rocks of the Tuggeranong and Molonglo Tunnels, particularly inflows and the effects of dewatering profiles.

Provide general hydrological advice to Government Departments, other organizations, and local landholders. Participate in Australian Water Resources Council (AWRC) and Technical Committee on Underground Water (TCUW) activities.

NB: All ACT hydrological activities are generally carried out in liaison with NCDC, DHC, and the Agricultural Branch of DCT.

Norfolk Island

Provide advice on hydrological potential of the Island.

## TECHNICAL SERVICES

### Project

### Nature of Work

#### Information Services

Prepare and disseminate information related to BMR, to Government, industry, the public, and the news media; answer queries from Ministers and Parliament as required.

Prepare the BMR Annual Report, Pictorial Index of Activities, List of Maps, List of Geoscience Events, and Open File Circulars, for distribution; organize the Annual BMR Symposium and other various lectures and displays for Universities and Schools.

Continue feasibility studies on an information storage and retrieval system for BMR.

#### Library

Maintain and operate an efficient and comprehensive library for use by BMR personnel and visitors.

#### Museum

Maintain and operate an efficient and comprehensive museum of geological material; provide informational and educational services to the public and teaching organisations.

#### Core and Cuttings Laboratory

Provide facilities to examine approved samples of core and cuttings from oil and gas wells. Data are obtained under the Petroleum Search Subsidy Act, the Petroleum (Submerged Lands) Act, State Mines Departments, private companies, and BMR parties and are released from time to time under various provisions of the Acts, or by consent of companies.

#### Geological Services

Provide map compilation and editing services for BMR publications; train field geologists in map preparation. Details of individual maps to be published are listed under Publications.

Prepare and revise Mineral Reports; maintain indexes and technical data files for use by BMR personnel; maintain the Central Register of Stratigraphic Names.

Photogeology and Remote Sensing

Complete final report to NASA on ERTS imagery of Canberra, Mt Isa, and Alice Springs; install ERTS multispectral viewer. Provide Secretariat for ACERTS Interdepartmental Committee.

Evaluate Skylab photography of Alice Springs and Canberra regions.

Compare and evaluate colour infra-red imagery with colour film imagery and detailed aeromagnetic results in well exposed mineralised terrain, particularly Mt Isa. Evaluate SLAR imagery of Mt Isa region.

Give lectures to the AMF Course in photo interpretation

Automatic Data Processing

Provide ADP facilities and advice to BMR activities.

Publications Editing

Edit BMR publications and papers for scientific journals.

Planning and Co-ordination

Review and investigate short and long term program proposals in terms of priorities, manpower requirements, financial resources, cost effectiveness, and co-ordination of interrelated projects.

## RESOURCES AND INDUSTRY

### Project

### Nature of Work

#### Petroleum Search Subsidy Act

Make recommendations on applications, inspect operations and monitor progress, assess final reports and determine subsidy payable; prepare reports for publications. The Subsidy Act will terminate on 30 June 1974 but the wind-up of payments and reports should continue to year's end.

#### Petroleum (Submerged Lands) Act

Receive, index, and store data (core and cuttings) and reports received under the Act. Provide facilities for examination and testing of samples; prepare representative thin sections. Maintain a register of all operations undertaken in offshore areas.

#### Petroleum Economics

Provide continuing assessments of Australian petroleum resources, particularly in terms of conservation and orderly development, costs of exploration, development and production, the economics of oil shale development, and comparative costs for alternative fuels. Prepare the Petroleum Titles map and Petroleum Newsletter; provide participation to the Oil Advisory Committee.

#### Mineral Economics Studies

Study long range production and consumption trends of metals and minerals, new techniques of mineral extraction, processing and utilisation, consumption statistics of recycled metals, and the contribution made by the mining and mineral processing industries to GNP. These studies contribute towards departmental advices and to the BMR publication 'Australian Mineral Industry Review'.

Carry out special studies to assess Australian resources of iron ore, copper, lead and zinc. Assess Australian equity and control of the domestic mineral industry in terms of production, reserves and profits. Study the domestic gemstone industry, particularly opals and sapphires, in relation to export controls.

Mining Engineering Studies

Carry out continuing econometric studies of the mineral industry in terms of the feasibility of proposed mining projects, inter-industry relationships of the mining industry, its contribution to national income and export earnings, and legislative aspects.

Report on operations of gold mines receiving assistance under the Gold Mining Industry Assistance Act. Provide participation to the Conference of Chief Inspectors of Mines and the Standards Association of Australia.



## APPENDIX A

### PUBLICATIONS IN PROGRESS (EXCLUDING MAPS)

Authors: Superscripts after an author's name indicates the following:

1. Formerly with BMR
2. With, or formerly with State Geological Survey
3. With, or formerly with university or other institution.

Status of Publications: Each publication passes through three stages prior to being released, viz:

In preparation (i.e. being written)

With editors

In press

In the following pages, the current stage of each publication is shown followed by the expected completion date of that stage. To estimate the release date of a publication in the preparation or editorial stages, it can generally be assumed that the editing process ranges from 3 to 6 months and printing requires from 6 to 12 months.

Publications

Author

Status at  
January 1974

CRUSTAL STUDIES

BULLETINS

Diurnal variations in the earth's magnetic field	Parkinson, D <sup>1</sup>	with editors (June)
Standard curves for magnetic anomalies over thin dykes (No 152)	Haigh, J E <sup>1</sup> Smith M S	in press (December)
Australian and Soviet gravity surveys along the Australian Calibration Line (No 161)	Wellman, P Boulanger Barlow, B C Shcheglov Coutts, D A	in preparation (February)
Explanatory Notes to accompany the Gravity Map of Australia, Scale 1:2,500,000	Barlow, B C Wellman, P Fraser, A Anfiloff, W Zadoroznyj, I Dooley, J C et al.	in preparation (1975)
Gravity measurements in the Prince Charles Mountains, Antarctica	Wellman P Tingey, R	in preparation (1975)
New Britain crustal survey	Wiebenga, W A Finlayson, D	in preparation (June)
East Papua crustal survey	Wiebenga, W A Finlayson, D	in preparation (1976)
Geology of south Qld and north NSW continental shelf	Jones, H A	on program
Geology of south and central NSW continental shelf	Davies, P J	in preparation (November)
Geology of Bass Strait and Tasman continental shelf	Davies, P J	in preparation (November)
Geology of the Northwest Shelf (No 136)	Jones, H A	in press (February)

Publication

Author

Status at  
January 1974

CRUSTAL STUDIES

BULLETINS

Geology of the Arafura Sea (No 157)

Jongsma, D

in press  
(December)

REPORTS

AFMAG Records (No 168)

Almond, R A

in press  
(July)

Seismicity of PNG, 1968 (No 169)

Denham, D

in press  
(August)

Seismicity of PNG, 1970

Ripper, I D  
Byrne, W M

in preparation  
(March)

Seismicity of PNG, 1873-1973

Everingham, I B  
Ripper, I D

in preparation  
(September)

Seismicity of PNG, 1969

Ripper, I D

in preparation

Focal mechanisms of PNG - Solomon Islands earthquakes  
1963-1970 (No 178)

Ripper, I D

with editors  
(March)

Madang earthquake 1970 (No 176)

Everingham, I B

with editors  
(February)

Strong motion results from Yonki, PNG 1967-72

Denham, D

with editors  
(April)

Atlas of Australian Iseoseismal Maps

Denham, D  
Petkovic, J

in preparation  
(March)

Catalogue of tsunamis, New Guinea/Solomon Islands  
1768-1972

Everingham, I B

with editors  
(April)

Solomon Sea earthquakes, 1971

Everingham, I B

in preparation  
(March)

Seismicity of PNG, 1971

Ripper, I D  
Byrne, W M

in preparation  
(1975)

PublicationAuthorStatus at  
January 1974CRUSTAL STUDIES

## REPORTS

Deep crustal seismic tests, 1968	Branson, J S et al.	with editors (April)
Galilee Basin seismic and gravity survey (No 175)	Harrison, P et al.	with editors (March)
Officer Basin seismic, gravity, magnetic and radiometric surveys	Harrison, P Zadoroznyj, I	in preparation (December)
The isogal project	Barlow, B C	in preparation (May)
Trans Australia seismic survey	Finlayson, D et al.	in preparation (November)
Magnetic MHV Gngara 1957-1970 (7 biennial Reports)	McGregor, P M Gregson, P J	in preparation (July)
Magnetic MHV Port Moresby 1957-1970 (7 biennial Reports)	Wilkie, R et al.	in preparation (July)
Magnetic MHV Toolangi 1959-1970 (6 biennial Reports)	Small, G R et al.	in preparation (September)
Magnetic MHV Mawson 1957-1970 (7 biennial Reports)	Small, G R McGregor, P M et al.	in preparation (November)
Magnetic MHV Macquarie Island 1957-1970 (7 biennial Reports)	McGregor, P M Small, G R et al.	in preparation (1975)
Isogonic Map of Australia	Van der Linden, J McMullan, M Silich, J	in preparation (April)

Publication

Author

Status at  
January 1974

CRUSTAL STUDIES

REPORTS

A magnetic reference field for the Australian region	McGregor, P M Van der Linden, J Whitworth, R	in preparation (June)
Observatory Report Vol 22		issued monthly
Reconnaissance helicopter gravity survey southeastern Australia.	Zadoroznyj, I	in preparation (August)
Marine geophysics, Bismarck Sea and Gulf of Papua, 1970 (No 179)	Mutter, J C	with editors (April)
Nature of the continental margin		in preparation (June)
The Timor Trough, geophysical interpretation	Watt, C J	in preparation (September)
Base of the crust around Australia		in preparation (December)
Sedimentary basins, offshore WA		in preparation (December)
Evolution of the coast of WA		in preparation (1975)
Tasman Sea tectonics		in preparation (November)
Magnetic basement around Australia		in preparation (1975)
The Great Australian Bight, geophysical interpretation	Wilcox, J B Petkovic, J Tilbury, L A	in preparation (1975)
The Woodlark Basin, geophysical interpretation		in preparation (1975)

Publication

Author

Status at  
January 1974

CRUSTAL STUDIES

REPORTS

The northwest continental margin, geophysical  
interpretation

Hogan, A  
Jacobson, E

in preparation  
(August)

The Naturaliste Plateau, geophysical interpretation

Cameron, P  
Petkovic, J

in preparation  
(August)

The Coral Sea Plateau, geophysical interpretation

Mutter, J  
Watt, C J

in preparation  
(August)

Publication

Author

Status at  
January 1974

SEDIMENTARY

BULLETINS

Permo-Triassic sedimentology, Bowen Basin (No 154)	Jensen, A R	in press (December)
Geology of the Rouchel district (No 147)	Roberts, J <sup>1</sup> Oversby, B S	in press (December)
Sydney Basin review (No 149)	Mayne, S J Nicholas, E Bigg-Wither, A L	in press (March)
Palaeontological Papers 1972-1973		
- Tertiary foraminifers, Irian Jaya		
- Marine Triassic cephalopods of Australia and PNG	Belford, D J Skwarko, S K Kummel, B <sup>3</sup>	in press (December)
- Some Ordovician graptolites from the Canning Basin WA, part 2	Skwarko, S K Kummel, B <sup>3</sup>	
- The Jurassic fossils of WA, part 1	Skwarko, S K	
Conodont biostratigraphy of Upper Devonian reef complexes of the Canning Basin, WA (No 158)	Druce, E C	in press (1975)
Cambrian trilobites (No 159)	Öpik, A A	with editors (July)
Palynology of Cenomanian rocks of Bathurst Island, NT (No 151)	Burger, D	with editors (April)
Canning Basin conodonts	Druce, E C Nicoll, R S	in preparation (June)
Lower Cretaceous spores, pollen grains, and microplankton from the Surat Basin, Qld	Burger, D	in preparation (March)
Tertiary pollen grains from the Ngalia Basin, NT	Burger, D	in preparation (October)

Publication

Author

Status at  
January 1974

SEDIMENTARY

BULLETINS

Templetonian and Ordian xystridurid trilobites (No 121)	Öpik, A A	with editors (February)
Carboniferous correlation chart (No 156A)	Jones, P J Campbell, K S W <sup>3</sup> Roberts, J S <sup>I</sup>	in press (March)
Devonian antiarchan fishes from Victoria Land, Antarctica	Young, G C	in preparation (May)
Ordovician dikelokephalinid trilobites from northern Australia	Gilbert-Tomlinson, J	in preparation (December)
Ordovician ichnolites from central Australia	Gilbert-Tomlinson, J	in preparation (December)
Late Cambrian and Early Ordovician trilobite faunas of the Burke River structural belt, western Queensland (No 153)	Shergold, J	with editors (March)
Late Cambrian trilobite faunas of the Chatsworth area, western Qld	Shergold, J	in preparation (1975)
Laurel-Fairfield conodonts	Nicoll, R Druce, E C	in preparation (April)
Oscar-Napier Range conodonts	Nicoll, R	in preparation (September)
Llandoveryan conodonts	Nicoll, R	in preparation (December)
Geology of the Ngalia Basin, NT	Wells, A T Moss, F J Shelley, E P	in preparation (December)
Geology of the Surat Basin, Qld	Exon, N	in preparation (March)



Publication

Author

Status at  
January 1974

SEDIMENTARY

BULLETINS

Late Devonian and Early Carboniferous history of the  
Canning Basin

Officer Basin

West Canning Basin

Sedimentology and Holocene history of a tropical estuary  
(Broad Sound, Qld)

Geochemistry of a tropical estuary (Broad Sound, Qld)

Mallacoota

Bothryolepis from Antarctica

Eucla Basin 1970 and 1972 airborne surveys

Canning Basin review

Bonaparte Gulf Basin

REPORTS

Cainozoic geology of Broad Sound, Qld (No 172)

Geology of the north Bowen Sheet (No 145)

Druce, E C  
Radke, B M

Jackson, M J  
et al

Radke, B M

Cook, P J  
Mayo, W

Cook, P J  
Mayo, W

Reinsen, E

Young, G C

Lambourn, S

Burgis, W

Paine, A G L

in preparation  
(1975)

on program

in preparation  
(December)

in preparation  
(December)

in preparation  
(December)

in preparation  
(March)

in preparation  
(November)

in preparation  
(July)

in preparation  
(1975)

on program

in press  
(November)

in press  
(March)

Publication

Author

Status at  
January 1974

SEDIMENTARY

REPORTS

Palaeozoic geology of Warwick-Goondiwindi 1:250,000  
Sheet areas (No 164)

Post Palaeozoic geology of Warwick 1:250,000 Sheet area  
(No 140)

Catalogue of type specimens (No 160)

Blackwater coal deposits (No 171)

Bowen Basin thermal infrared imagery

Geochemistry of Devonian-Carboniferous Canning Basin

Report 41A - (Revision)

Roma Shelf 1967/68 seismic survey

Geology of Melville Island

Australian evaporites

Ngalia Basin seismic survey, 1967-69

Olgers, F<sup>1</sup>  
Flood, P G<sup>1</sup>

Exon, N F  
Reiser, R F<sup>2</sup>  
Casey, D J<sup>2</sup>  
Brunker, R L<sup>2</sup>

Crespin, I

Burgis, W

Simpson, C J

Druce, E C  
Radke, B M

Nicholas, E  
Rixon, K

Willcox, J B et al.

Hughes, R

Wells, A T

Moss, F J

in press  
(June)

in press  
(delayed  
through loss of  
edition in fire)

in press  
(June)

with editors  
(March)

in preparation  
(May)

in preparation  
(December)

on program

in preparation  
(1975)

in preparation  
(December)

in preparation  
(December)

in preparation  
(March)

Publication

Author

Status at  
January 1974

METALLIFEROUS

BULLETINS

Mineral deposits of Papua New Guinea (No 148)	Grainger, D J <sup>1</sup> Grainger, R L <sup>1</sup> Palfreyman, W D	in press (July)
Chemical analyses of Australian rocks (Supplement) (No 146)	Joplin, G A	in press (December)
Earth science abstracts, PNG (No 143)	Manser, W <sup>3</sup>	in press (April)
Geology of the Kubor Anticline (No 155)	Bain, J H et al.	with editors (March)
Geochronology of the New Guinea Highlands (No 162)	Page, R W	with editors (March)
Geology of the Carpentaria Proterozoic Province, Arnhem Land, NT	Roberts, H G <sup>1</sup> Plumb, K A	in preparation (January)
Geology of the Carpentaria Proterozoic Province: Roper River to Qld border	Plumb, K A Dunn, P R Roberts, H G <sup>1</sup> Smith, J W <sup>1</sup>	on program (indefinite)
Geology and petrology of the Antrim Plateau volcanics	Bultitude, R J	in preparation (May)
Geology of the Prince Charles Mountains, Antarctica	Tingey, R J	in preparation (September)
Geology of the Granites-Tanami area, NT and WA	Blake, D H Hodgson, I M <sub>2</sub> Muhling, P C <sup>2</sup>	in preparation (December)
Precambrian geology of the Kimberley region, WA - the Kimberley Basin	Plumb, K A	on program (indefinite)

Publication

Author

Status at  
January 1974

METALLIFEROUS

BULLETINS

Precambrian geology of the Kimberley region, WA -  
the West Kimberley

Geology of the Tennant Creek 1:250,000 Sheet area

The Arltunga Nappe Complex, NT

Geology of the north Sepik region

Geology of New Britain, PNG

Geology of the Cloncurry - Mount Isa region

Geochronology of the east Kimberley region

Geology of the Victoria River Basin

Petrology and geochemistry of basic igneous  
rocks - NW Qld

Geochemistry of the Tennant Creek Mineral Field

Gellatly, D<sup>2</sup>C<sup>1</sup>  
Sofoulis, J<sup>2</sup>  
Derrick, G M

Mendum, J R<sup>1</sup>  
Tonkin, D C<sup>1</sup>

Stewart, A J  
Shaw, R D  
Yar Khan, <sup>3</sup>M<sup>3</sup>  
Funk, J L<sup>3</sup>

Hutchison, D S  
Norvick, M S

MacKenzie, D E  
Ryburn, R J

Wilson, I H<sup>2</sup>  
Hill, R M  
Glikson, A Y  
Derrick, G M

Bofinger, V M<sup>1</sup>

Sweet, I P

Ellis, D J  
Glikson, A Y  
Walker, K R

Haldane, A D  
Smith, S E

on program  
(indefinite)

on program  
(indefinite)

in preparation  
(1975)

in preparation  
(March)

in preparation  
(1975)

in preparation  
(1976)

in preparation  
(indefinite)

in preparation  
(August)

in preparation  
(1975)

in preparation  
(December)

Publication

Author

Status at  
January 1974

METALLIFEROUS

BULLETINS

Geochemistry of north Qld granites

Geology of the Aligator Uranium Province

Gosses Bluff

Petrology and geochemistry of acid rocks of the  
Georgetown Inlier

Notes to accompany Map of the Geology of the  
Northern Territory

Geology of southeastern Papua

Geology of the Western Central Range, PNG

Sheraton, J W  
Weeks, J C W

Needham, R S  
Smart, P G  
Watchman, A L

Barlow, B C

Sheraton, J W  
Labonne, B

D'Addario, G W

Smith, I E<sup>1</sup>  
Davies, H L<sup>1</sup>  
Belford, D J

Davies, H L<sup>1</sup>  
Norvick, M S  
Hutchison, D S

in preparation  
(July)

in preparation  
(1975)

in preparation  
(October)

in preparation  
(October)

in preparation  
(August)

with editors  
(June)

in preparation  
(1975)

REPORTS

Geology of the Charnley 1:250,000 Sheet area (No 154)

Geology of the Lennard River 1:250,000 Sheet area (No 153)

Geology of the northern Victoria River region (No 166)

Geology of the southern Victoria River region (No 167)

Gellatly, D C<sup>1</sup>

Gellatly, D C<sup>1</sup>

Sweet, I P et al.

Sweet, I P et al.

in press  
(August)

in press  
(October)

in press  
(August)

in press  
(December)

Publication

Author

Status at  
January 1974

METALLIFEROUS

REPORTS

Geology of the Auvergne 1:250,000 Sheet area (No 161)	Sweet, I P	in press (August)
Geology of the Lansdowne 1:250,000 Sheet area (No 152)	Gellatly, D C <sup>1</sup>	with editors (June)
Isotopic age catalogue (No 162)	Bennet, R <sup>1</sup> Page, R W	with editors (February)
Petrology of the Arnhem Land basement rocks	Plumb, K A	in preparation (June)
Precambrian geology of the Granites, Billiluna, Stansmore and Lucas 1:250,000 Sheet areas	Blake, D H Hodgson, I M	in preparation (June)
Geology of Birrindindi and Tanami 1:250,000 Sheet areas	Blake, D H Hodgson, I M Smith, P A	with editors (April)
Geology of the Cloncurry 1:100,000 Sheet area	Glikson, A Y Derrick, G M	in preparation (February)
Geology of the Mary Kathleen 1:100,000 Sheet area	Derrick, G M Wilson, I A <sup>2</sup> Hill, R M Glikson, A Y	in preparation (March)
Geology of the Mount Isa 1:100,000 Sheet area	Wilson, I H <sup>2</sup> Hill, R M Derrick, G M	in preparation (June)
Geology of New Ireland	Hohnen, P D	in preparation (December)
Ringwood evaporites	Stewart, A J	with editors (June)

Publication

Author

Status at  
January 1974

METALLIFEROUS

REPORTS

Progress Report - McArthur River/Roper River area

Roberts, H G<sup>1</sup>  
Plumb, K A

in preparation  
(1975)

Geology of the Marraba 1:100,000 Sheet area

Derrick, G M et al. in preparation  
(June)

Amadeus Basin airborne survey, 1965

Young, G A  
Shelley, E P

in preparation  
(June)

Tottenham airborne survey, NSW

Rees, J E  
Taylor, R J G

with editors  
(April)

Publication

Author

Status at  
January 1974

HYDROLOGY

REPORTS

Recharge of aquifers in the ACT (No 173)

Burton, G M

with editors  
(April)

Lake George hydrology

Burton, G M

with editors  
(May)

Burdekin Delta underground water investigations  
1962-63 (No 177)

Wiebenga, W A  
et al.

with editors  
(April)

MISCELLANEOUS

REPORTS

Bibliography of silcrete and laterite

Watts, G<sup>3</sup>

in press  
(June)



APPENDIX B

PUBLICATIONS IN PROGRESS (GEOLOGICAL MAPS ONLY)

Note: The dates shown on the following pages refer to the estimated date of release.

Reference	Sheet	Preliminary Edition(s)	First Edition	Remarks
<u>1:250,000 SERIES AND EXPLANATORY NOTES</u>				
SC/52 - 15	Bathurst Island	available	mid 1975	
- 16	Melville Island	"	mid 1975	
SC/53 - 13	Cobourgh Peninsula	"		
SC/54 - 12	Torres Strait	August*		1st Prelim. Ed. available
- 15	Jardine River	August		
- 16	Orford Bay	August*		1st Prelim. Ed. available
SD/52 - 3	Fog Bay	available		
SD/53 - 1	Alligator River		available	2nd Ed. in preparation
SD/54 - 3	Weipa	available		
- 4	Cape Weymouth	" *		
- 7	Aurukun	"		
- 8	Coen	" *		
- 11	Holroyd	" *		
- 12	Ebagoola	" *		
- 16	Hann River	" *		
SE/51 - 3	Yampi	"	August	
- 16	Crossland	August		
SE/52 - 3	Waterloo	available	April	
- 4	Victoria River Downs	"	April	
- 11	Birrindudu	"	early 1975	
- 12	Winnecke Creek	"		additional mapping programmed for 1975-76
- 13	Mount Bannerman	August*	available	
- 14	Billiluna	April *	available	
- 15	Tanami	available	early 1975	
- 16	Tanami East	"		additional mapping programmed for 1975-76
SE/53 - 9	South Lake Woods	"		" " "
- 13	Green Swamp Well	"		" " "
- 14	Tennant Creek	indefinite		
SE/54 - 1	Mornington	available		1st Ed. in preparation
- 2	Cape van Diemen	"		" " " "
- 4	Walsh	"		" " " "

\* 2nd Preliminary Edition

Reference	Sheet	Preliminary Edition(s)	First Edition	Remarks
SE/54 - 5	Westmoreland	July*		
- 8	Red River	available	late 1975	
- 11	Croydon	"		1st Ed. in preparation
SF/51 - 4	Dummer	late 1974		
- 8	Percival	late 1974		
SF/52 - 1	Cornish	December*	available	
- 2	Lucas	August*	"	
- 3	The Granites	March		
- 4	Mount Solitaire	available		additional mapping programmed for 1975-76
- 5	Helena	late 1974		
- 6	Stansmore	April	available	
- 7	Highland Rocks	December		
- 8	Mount Theo	August		
- 10	Webb	December		
SF/53 - 1	Lander River	available		additional mapping programmed for 1975-76
- 10	Alcoota	"	early 1975	
- 14	Alice Springs	mid 1975*	available	
SF/54 - 2	Cloncurry	1975	"	
SF/55 - 1	Hughenden	available	August	
- 14	Jericho	"	August	
SF/56 - 9	Port Clinton	"	early 1975	
- 13	Rockhampton	"	early 1975	
SG/51 - 3	Madley	"	early 1975	
- 4	Warri	"	early 1975	
- 7	Herbert	"	early 1975	
- 8	Browne	"	mid 1975	
- 11	Robert-Kingston	May		
- 12	Yowalga	available	mid 1975	
- 15	Throssel	indefinite		GSWA to contribute
- 16	Westwood	available	late 1975	
SG/52 - 1	Cobb	"	early 1975	
- 13	Lennis	August		
- 14	Waigen	December		

\* 2nd Preliminary Edition

Reference	Sheet	Preliminary Edition(s)	First Edition	Remarks
SG/53 - 4	Simpson Desert North	available	August	
- 8	Simpson Desert South	"	August	
SG/56 - 5	Mundubbera	"		to be published by GS Qld.
- 13	Dalby	"	April	
SH/51 - 3	Rason	December		
- 4	Neale	December		
- 11	Cundeelee	December		
SH/52 - 1	Vernon	August		
- 2	Wanna	April		
SA/54 - 11	Vanimo	December		
- 15	Aitape	December		
- 16	Wewak			Prelim. Ed. in preparation
SA/55 - 13	Sepik			Prelim. Ed. in preparation
SB/54 - 3	May River	August		
- 4	Ambunti	August		
- 7	Blucher Range	available	April	
- 8	Wabag	December*		
SB/55 - 5	Ramu	available	December	
- 8	Cape Raoult-Arawe	April	mid 1975	
- 14	Wau	available	April	
- 15	Salamaua	"	indefinite	
SB/56 - 5	Talasea	"	early 1975	
- 6	Pomio	"	December	
- 9	Gasmata	"	early 1975	
SC/55 - 3	Buna	December		
- 8	Tufi-Cape Nelson	available	December	
SR/41 - 42/6	Stinear Nunataks	"	indefinite	pending availability
- 10	Crohn Massif	"	"	of base maps from
- 11	Beaver Lake	"	"	Division of
- 14	Mount Hicks	"	"	National Mapping
- 15	Fisher Massif	"	"	

\* 2nd Preliminary Edition

Reference	Sheet	Preliminary Edition(s)	First Edition	Remarks
<u>1:100,000 SERIES</u>				
<u>SERIES R 611 (WESTERN AUSTRALIA)</u>				
3665	Yampi	available		
3962	Leopold Downs	"		
<u>SERIES R 621 (NORTHERN TERRITORY)</u>				
5474	Murgenella			incorporated in Cobourg Peninsula 1:250,000 Sheet
5574	Wellington Range	1975		
5674	Junction Bay	1975		
5373	Field Island	1975		
5473	East Alligator	December		
5573	Oenpelli	December		
5673	Goomadeer	1975		
5372	Kapalga	1975		
5472	Cahill	December		
5572	Howship	1975		
5371	Mundogie	1975		
5471	Jim Jim	1975		
5571	Gilruth	1975		
6462	Seigal	December		
5355	Studholme			partly mapped; will be presented as Bulletin text fig.
5454	Mount Peake	November		
5253	Yuendumu	1975		
5353	Denison	1975		
5453	Reynolds Range	November		
5553	Tea Tree	November		
5452	Napperby			partly mapped; will be presented as Bulletin text fig.
5552	Aileron	December		

Reference	Sheet	Preliminary Edition(s)	First Edition	Remarks
<u>SERIES R 621 (NORTHERN TERRITORY) (Cont'd)</u>				
5451	Narwietooma	1975		
5551	Anburla	1975		
5651	Burt	1975		
5751	Laughlen	December		
5851	Riddoch	December		
5450	Hermannsburg	December		
5650	Alice Springs	December		
5750	Undoolya	December		
5850	Fergusson Range	December		
Rum Jungle Special Map		1975		
<u>SERIES R 631 (QUEENSLAND)</u>				
6562	Hedleys Creek	November		
6561	Bowthorn	1976		additional mapping programmed for 1975
6560	Musselbrook	1976		" " " B-5
6660	Lawn Hill	1976		" " "
6757	Kennedy Gap	mid 1975		
6857	Prospector	mid 1975		
6957	Quamby	mid 1975		
6756	Mount Isa	available	1975	
6856	Mary Kathleen	"	1975	
6956	Marraba	"	1975	
7056	Cloncurry	"	1975	
7661	Georgetown	December		
7760	Forsayth	December		
<u>SERIES R 651 (NEW SOUTH WALES)</u>				
8627	Brindabella	November		
8626	Tantangara	May		

Reference	Sheet	Preliminary Edition(s)	First Edition	Remarks
<u>OTHER SCALES</u>				
North Carpentaria Basin	1:1,000,000	December		
South Carpentaria Basin	1:1,000,000	available	1975	
Kimberley to Mount Isa	1:2,500,000		May	
Burdekin River Region	1:500,000	available	indefinite	
Northern Eromanga Basin	1:1,000,000	available	1975	
Western Eromanga Basin	1:1,000,000	available	1975	
Central Eromanga Basin	1:1,000,000	available	1975	
Surat Basin	1:1,000,000	available	1975	
Officer Basin	1:1,000,000	1975		
Granites-Tanami	1:500,000	1975		
West Kimberley	1:500,000	available	1975	
Kimberley Basin	1:500,000	available	1975	
Ord River Region	1:500,000	available	indefinite	
Victoria River Region	1:500,000	May		
Wiso Basin	1:1,000,000	available		for Bulletin only; following additional mapping 1974/75
Ngalia Basin	1:500,000	December		
Central Australia (Metamorphic)	1:1,000,000	available	available	
Geological Map of the Northern Territory	1:2,500,000	available		
Cainozoic Stratigraphy of the Northern Territory	1:2,500,000			
Geology of New Britain	1:500,000	1975		