



FIELDNOTES



Mapping Focus in the Pilbara

The second field season of the North Pilbara National Geoscience Mapping Accord (NGMA) Project brings a major expansion to the mapping program. Compilation of the ROEBOURNE 1:100 000 sheet will be completed and mapping will move onto the MOUNT WOHLER, PINDERI HILLS, NORTH SHAW (AGSO), TAMBOURAH (AGSO), and MUCCAN 1:100 000 sheets. The 1996 NGMA team consists of three geologists from GSWA and three geologists from AGSO, one of the latter commencing a regional metallogenic study. A major geophysical survey is planned for 1996, and will cover most of the central and east Pilbara.

Mapping in the west Pilbara last year has resulted in substantial revision of the stratigraphy of the Whim Creek Belt and the recognition of three distinct tectono-stratigraphic domains in the Dampier–Roebourne area. Recent suggestions of accretionary tectonics in the west Pilbara, with the Dampier–Roebourne greenstones having a maximum age of c. 3.1 Ga (cf. 3.5–3.2 Ga in the east Pilbara), conflict with results from new field and isotopic evidence obtained in 1995. Additional zircon U–Pb dating and Sm–Nd work, and the completion of fieldwork around Roebourne in 1996, should conclusively resolve this issue.

South of Whim Creek, the 1996 field season will address the major problem of the age and stratigraphic affinities of the regionally extensive Mallina Formation. This unit, which outcrops over an area of 7000 km², effectively separates the granite–greenstone terrains of the east and west Pilbara, and has long created problems for regional stratigraphic interpretation. Two geologists, one from GSWA and the other from AGSO, are assigned to this daunting task and will undertake detailed structural studies near Whim Creek with assistance from zircon U–Pb dating.

Publications in 1996–97 will include the DAMPIER and SHERLOCK 1:100 000 sheets, summary reports on the 1995 mapping (GSWA Annual Review), aeromagnetic and radiometric images, for the west Pilbara, and papers presenting new geochronological data. Additionally, AGSO will produce a GIS Atlas for the entire granite–greenstone terrain of the North Pilbara, compiling all mineral deposits and geophysical data in relation to a detailed geological base map. □

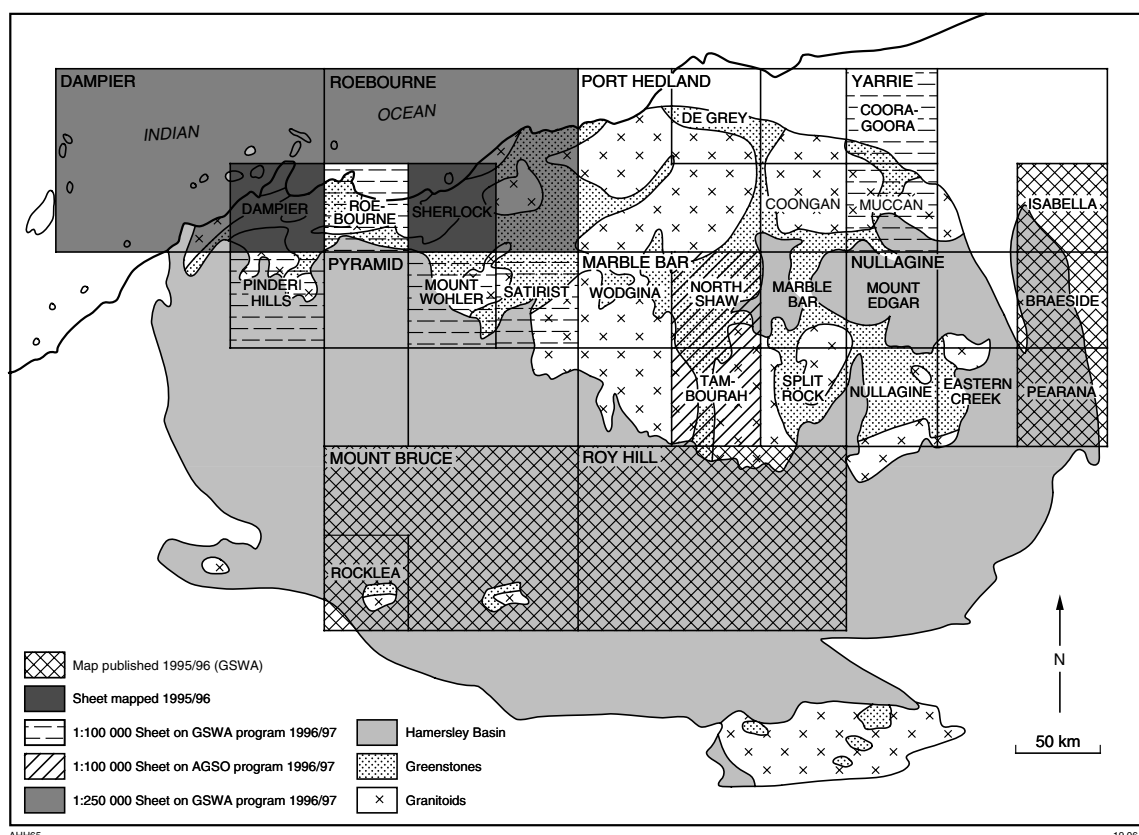
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BEHIND THE SCENES..... Arthur Hickman

For the past eighteen months, Arthur Hickman has led the 1:100 000 mapping program in the northern Pilbara Craton. This is now an NGMA project planned to run to the year 2000, and currently involves ten GSWA and AGSO geoscientists.

Originally from Manchester, Arthur completed his BSc and PhD degrees at the University of Birmingham, following which, in 1972, he joined the GSWA as a geologist in the Mineral Resources Section.

He was immediately assigned to 1:250 000 mapping in the Pilbara until 1976, after which he compiled a Bulletin on the area.

A term of regional mapping in the Wheatbelt was followed by appointment in 1979 as Officer-in-Charge of the newly opened Kalgoorlie Regional Office, and further geological mapping at Mount Monger.

Promoted to Senior Geologist in 1981, Arthur commenced a metallogenic project in the Murchison that eventually culminated in co-authorship of another major GSWA Bulletin.

Arthur is finding management of the Pilbara Craton program, which followed yet another four years of 1:100 000 mapping (this time in the Paterson Orogen),

very satisfying on a number of counts. Most particularly, the systematic detailed mapping will test stratigraphic correlations between the East and West Pilbara and also permit examination of recent suggestions that the craton evolved through plate tectonic processes, with all the potential for mineralization this would imply. □

NEED HELP WITH REPORTING ON MINERAL EXPLORATION ?

New “Guidelines for Mineral Exploration Reports on Mining Tenements”, are available from the First Floor and the Library Counters at Mineral House and from all Mining Registrars’ Offices.

Originally gazetted on the 3rd of November 1995, the Guidelines describe the format, contents, and standards required for mineral exploration reports submitted in accordance with Section 115A of the Mining Act. This is a new section of the Act, which became effective on the 14th of October 1995.

Exploration carried out on mining tenements represents a huge investment in the acquisition of geoscientific data.

Statutory reporting requirements ensure that as much of this information as possible is collected and archived by the State for current and future reference.

When reports are released to open file they can be used by explorers as a basis for selecting ground and for planning new exploration programs. In this way existing data can be reassessed and the repetition of past work avoided. The recycling of previous exploration data ensures that best use is made of industry expenditure on mineral exploration.

Mineral exploration reports submitted to the Department are held confidentially until they are eligible for public release on to open file after mining tenements have either expired or have been surrendered. Open file reports are indexed in the Geological Survey’s WAMEX system which provides the public with the facility to search for exploration data using a variety of keywords. ☐

For further information or assistance with reporting on mineral exploration activity, contact:

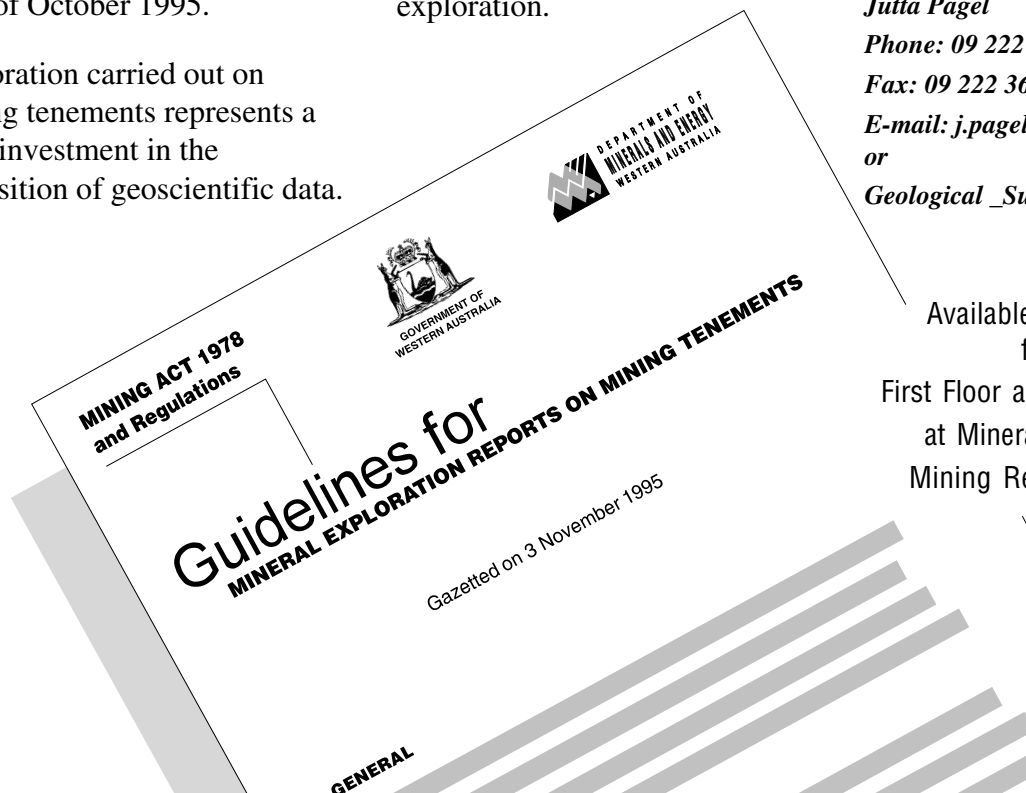
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Available free of charge from the First Floor and Library Counters at Mineral House and all Mining Registrars’ Offices.

The WAMEX system can be accessed via the Internet (see article on page 4) or via the Library (5th Floor of Mineral House, Telephone 222 3165).



WAMEXTM database

 — LIVE ON THE WEB

If you are planning a mineral exploration program you cannot afford to overlook WAMEX — the Western Australian Mineral Exploration system.

The Geological Survey of Western Australia's WAMEX system will be available on-line to users of the Internet in July 1996. It is an index to the vast amount of mineral exploration data available through the open-file system and held on microfiche within the Library of the Department of Minerals and Energy. The reports contain company exploration data on surrendered mining tenements from 1960 onwards (currently about 21,500 reports growing at a rate of 1000 to 2000 volumes each year).

The index consists of a variety of searchable keywords such as exploration method, commodity, location, and bibliographical information, and contains a short abstract for each project. There is also information about the size and structure of reports which will allow you to calculate the approximate cost of either a microfiche or hard copy.

Access to the WAMEX system was previously only available through terminals situated in the Department's library. From July 1996 WAMEX will also be available on your own computer,

either through a dial-in facility or via the Internet. This will allow you to search the database, download the results into your system or print them on your own printer.

**“There will be
no charge for
on-line use of
WAMEX”**

To use the service you will require a TCP/IP protocol stack for Windows (Winsock with PPP), a World Wide Web browser and an IBM 3270 emulator. The emulator software allows you to communicate with the Department's mainframe. Your computer supplier should be able to help you choose software appropriate for your environment.

In order to connect to WAMEX you will need to access the Department's home page (<http://www.dme.wa.gov.au>). From within the home page,

click on **Products and Services** and from within this page, click on **On-line Services**. After supplying some registration details you will be issued with a user name and password. If you are already using the TENDEX (Mining Titles) System, you can simply extend your registration to cover WAMEX by clicking on the appropriate box on the registration page.

WAMEX will be accessible day and night from Monday to Friday (excluding public holidays) apart from a three hour period between 6.00pm and 9.00pm daily, which has been reserved for system maintenance. Support will be available through our help desk (helpdesk@dme.wa.gov.au) as well as through on-line help screens and a printed manual. □



1995–96 Another big year for GSWA published output

Additional government funding for ‘new initiatives’ in 1993–94 has resulted in a surge of productivity by the Geological Survey. The quantum leap in published output by the Geological Survey in 1993–94 and again in 1994–95 was sustained in 1995–96 as the results of new regolith geochemistry programs in the Yilgarn and accelerated mapping in the Eastern Goldfields were published. Image processing and interpretative maps resulting from newly acquired aeromagnetic and radiometric data in the Goldfields and Pilbara were also released.

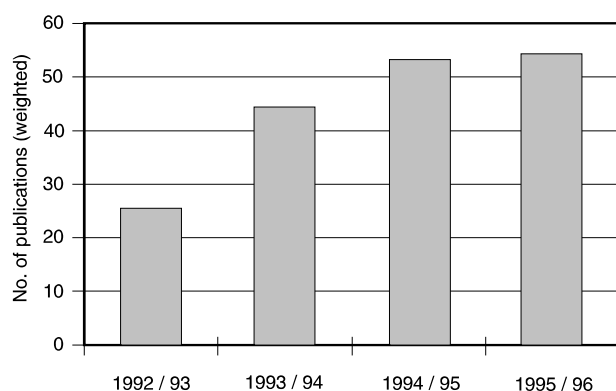
Results from the work of the *Petroleum Initiatives Teams* on the onshore western margins and interior basins have also contributed with the release of aeromagnetic and gravity datasets from the Merlinleigh and Byro Sub-basins of the Carnarvon Basin, and a gravity dataset from the Savory Basin. Well completion reports for two stratigraphic wells (Ballythanna 1 and Gneudna 1) in the onshore Carnarvon Basin have also been released.

Published output in 1996–97 is expected to continue at a comparable level as work to

support the minerals industry continues in the Yilgarn, Pilbara and Glengarry, and as new projects in the Gascoyne and Bangemall come on stream.

Basic and interpretative data packages designed to enhance the prospectivity of onshore sedimentary basins (Canning and Officer Basins) are also being assembled and two further stratigraphic wells are planned to complement data obtained from the two stratigraphic wells drilled in the Carnarvon Basin in 1995. □

Annual weighted published output





Bush Telegraph

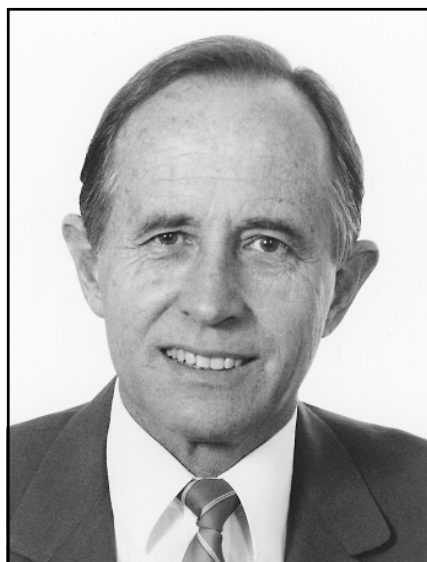
Field mapping in the **Glengarry Basin** will be finalised by the end of 1996, with the completion of mapping on the CUNYU 1:100 000 sheet. Nine 1:100 000 sheets with Explanatory Notes, a Bulletin and several other publications will result from this project. In all six GSWA geologists and two geologists visiting from Denmark and Eritrea, in 1994 and 1995 respectively, have been involved in this **New Initiatives Mapping Project**, which began in late 1993.

Availability of the shearers' quarters at Killara Homestead and the hospitality of Bill and Val Johns was much appreciated by the Glengarry mapping team during the course of this project.

Mapping and compilation of 1:100 000 sheets in the **Norseman-Wiluna** belt is now complete, and the East Yilgarn mapping team is in the process of compiling new editions of the EDJUDINA, MENZIES, DUKETON and WILUNA 1:250 000 sheets. The recently

released aeromagnetic images of the northern Eastern Goldfields will be used, in conjunction with the new generation of geological maps, to extend the Survey's regional interpretative mapping that has created much interest in the Kalgoorlie, Edjudina and Kurnalpi terranes.

Dr Shefa Chen has joined the east Yilgarn mapping Team and will be based in the Kalgoorlie Regional Office. Dr Chen has a particular interest in structural geology and large-scale tectonics. □

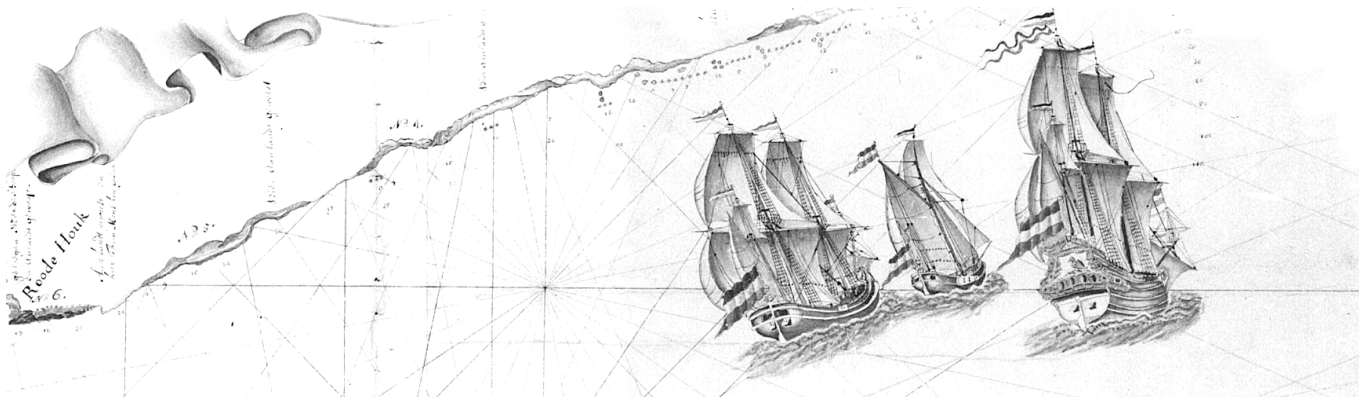


Did you know ?

In June of this year, former Director of the Geological Survey, Phil Playford, published his book 'Carpet of Silver' (subtitled 'The Wreck of the Zuytdorp').

This book is the outcome of Phil's long-standing research on the Zuytdorp, one of the great ships of the Dutch East India Company which disappeared in April 1712. Through his research, which began in 1954, Phil was able to prove that wreckage at the foot of coastal cliffs 60 km north of Kalbarri was that of this long-lost ship. His book brings to life the adventurous story of the Zuytdorp.

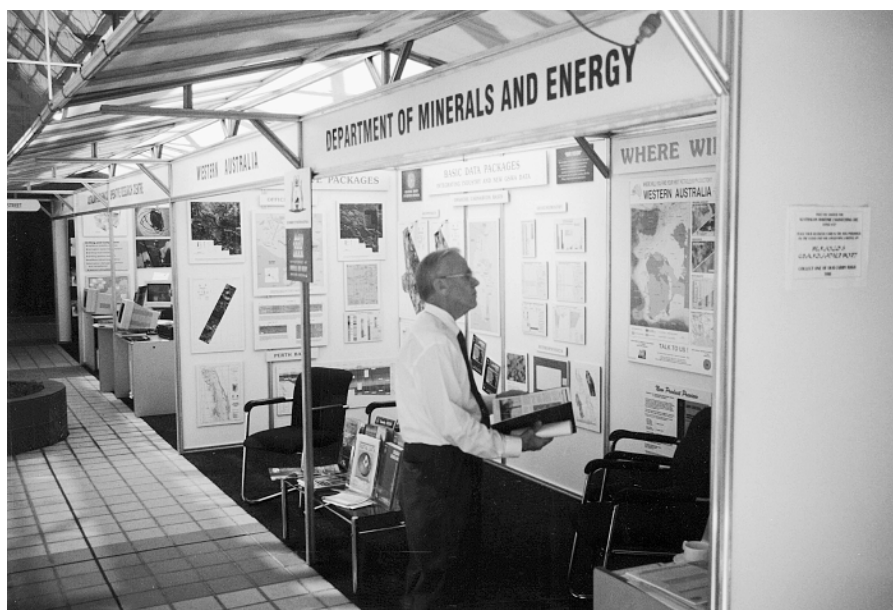
He was recently rewarded by the West Australian Government for his role as co-discoverer of the Zuytdorp. □



GSWA DISPLAYS ITS WARES AT AAPG AND APPEA

Displays of recent work by the two GSWA *Petroleum Initiatives Teams* were mounted in June for the American Association of Petroleum Geologists (AAPG) Conference in San Diego and the Australian Petroleum Production and Exploration Association (APPEA) Conference in Darwin.

Both local and international explorers are now aware that the GSWA *Western Margins* and *Interior Basins* Teams are in the process of building comprehensive datasets to enhance the prospectivity of onshore Western Australia. By collating and interpreting existing open-file information, and adding to it newly acquired data, basic and interpretive data packages are being assembled in preparation for the time when industry focus returns to the onshore arena.



Although activity and interest is focused largely offshore at present — North West Shelf and Timor Sea — these conferences were an opportunity to reinforce with industry our ongoing work in onshore areas currently seen by them as less-prospective. □



SOME RECENT PUBLICATIONS

Geology of the Greenstone Terranes in the Kurnalpi–Edjudina Region Southeastern Yilgarn Craton

REPORT 47 by C.P. Swager Book and map \$40.00

Petroleum Source Rocks, Merlinleigh and Byro Sub-basins, Carnarvon Basin, Western Australia

RECORD 1995/5 by K.A.R. Ghori \$20.00

Depositional history of the lower Permian Carolyn Formation and Poole Sandstone in the northern Canning Basin

RECORD 1996/8 by S.N. Apak \$20.00

GSWA Gneudna 1 well completion report

RECORD 1996/6 compiled by A.J. Mory \$20.00

GSWA Ballythanna 1 well completion report

RECORD 1996/7 compiled by A.J. Mory \$20.00

1:100 000 GEOLOGICAL SERIES MAPPING

MOUNT REMARKABLE by S. Sheppard	BRAESIDE by I.R. Williams	PEARANA by I.R. Williams] \$10.00 each
RUDALL by A.H. Hickman	ISABELLA by I.R. Williams	THROSSELL by I.R. Williams	

REGOLITH GEOCHEMISTRY

Geochemical mapping of the SIR SAMUEL 1:250 000 sheet

by C.J. Kojan, J.A. Faulkner and A.J. Sanders \$100.00*

*Price includes 5 plates and a disk containing digital sample data.

Fifty-one individual maps available at 1:250 000 scale including:

- | | |
|---|-----------------------------------|
| 1. Regolith materials map |] Included with Explanatory Notes |
| 2. Company surface geochemistry projects | |
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Also available in GIS format (ARCINFO/ARCVIEW)

Primary dataset (Regolith materials, sample data and locations, geological and geomorphological

attributes, mineral exploration tenement data \$100.00

Additional themes By negotiation

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