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PILBARA ROCKCHEM DATA SET DOCUMENTATION

RECORD 1991/39



by A.Y. Glikson, L.A.I. Wyborn and R.J. Ryburn

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Mineral Resources, Geology and Geophysics

Pilbara

Rockchem Data Set

Documentation

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A.Y. Glikson, L.A.I. Wyborn
and R.J. Ryburn



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DEPARTMENT OF PRIMARY INDUSTRIES AND ENERGY

Minister: The Hon. Alan Griffiths

Secretary: G.L. Miller

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

Executive Director: R.W.R. Rutland AO

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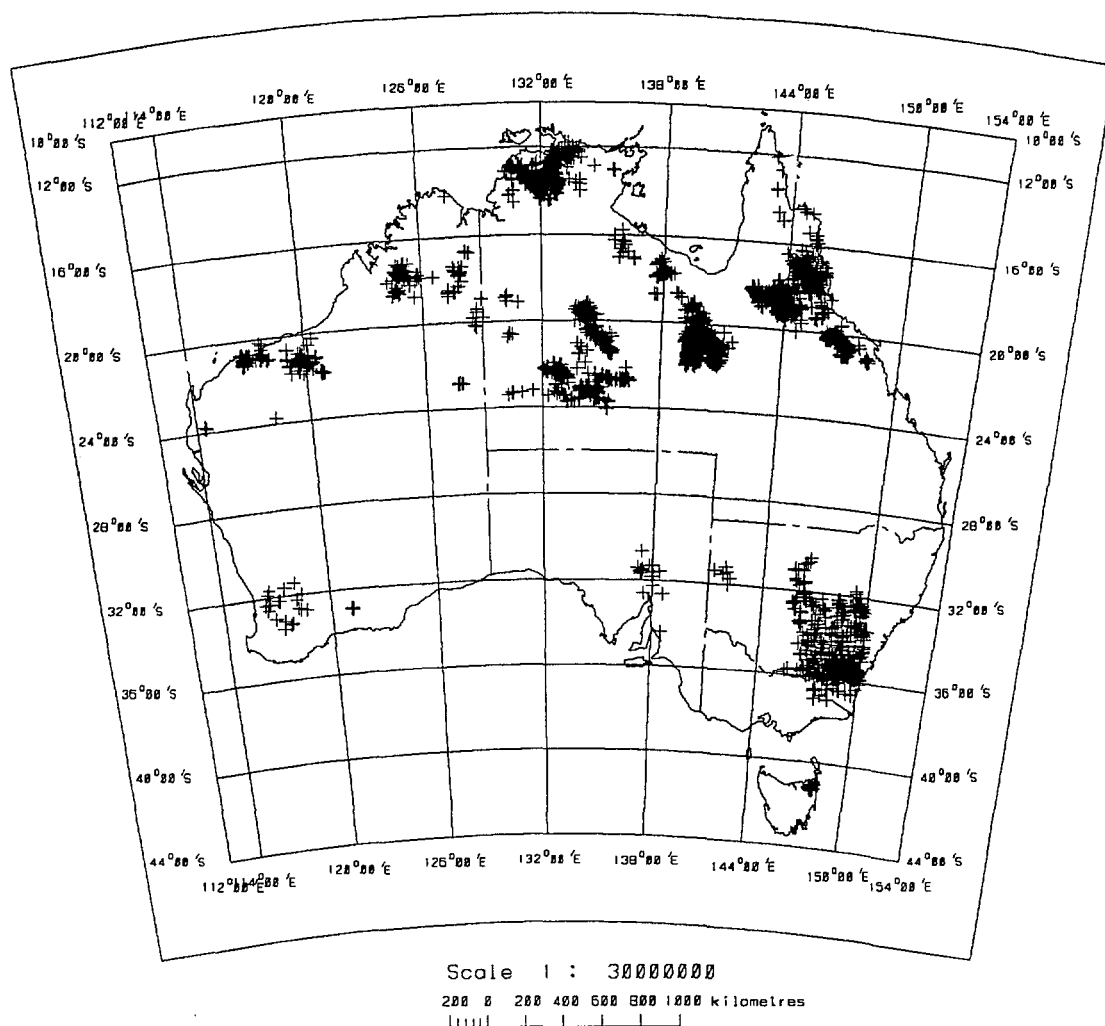
ABSTRACT

ROCKCHEM is the whole rock geochemical data storage system of the Minerals and Land Use Program of the BMR, Geology and Geophysics and utilises the relational database management system ORACLE. This data set contains 1386 analyses (both major and trace elements) from the Pilbara region. Most samples are located by AMG grid references and/or decimal latitude and longitude. This record describes tables used in ROCKCHEM and defines the fields used within these tables. A short description of the data contained is given and a bibliography of the main references that were generated from the data.

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Simple Conic Projection
 Standard parallels
 18° S and 36° S

Figure 1. Distribution of Rockchem samples in Australia.

1. INTRODUCTION

ROCKCHEM is the whole-rock geochemical data storage system of the Minerals and Land Use Program of the BMR Geology and Geophysics, Australia. It is based on the commercial relational database management system ORACLE. The complete database contains approximately 17445 analyses from Australia (see Figure 1) and Antarctica, and can be divided into either regional or thematic data sets. The data is currently subdivided into the data sets as listed in Table 1. Most of these data sets will be released by late 1991.

Subset	Areas Covered	No. of Analyses	Coordinator
Regional Databases			
Antarctica	Antarctica	1318	J.W. Sheraton
Arunta	Arunta Block	793	R.G. Warren
Lachlan	Lachlan Fold Belt NE Tasmania NW Tasmania	1149 300 40	D. Wyborn
McArthur	McArthur Basin Murphy Tectonic Ridge	533 74	K. Plumb, L. Wyborn
Mount Isa	Mount Isa Inlier	2296	L. Wyborn
NE Queensland	Georgetown Inlier NE Queensland	1940	D.E. Mackenzie
Pilbara	Pilbara Block	1386	A.Y. Glikson
Pine Creek	Pine Creek Inlier	2056	L. Wyborn
South Australian Proterozoic	Stuart Shelf, Adelaide Geosyncline	232	J. Knutson
Tennant Creek	Tennant Creek Inlier Davenport Province	1431 170	L. Wyborn
West Australian Proterozoic	Capricorn Province Granites Tanami Block Halls Creek Block	227 56 164	L. Wyborn
Yilgarn	Yilgarn Block	400	P.R. Williams
Thematic Databases			
Alkaline	Kimberlites Alkaline Rocks	880	A.L. Jaques
EAVS	East Australian Volcanics(Cainozoic)	2000	J. Knutson

Table 1. List of Data Sets in Rockchem.

2. THE PILBARA DATA SET

This ROCKCHEM data set is a release of approximately 1386 analyses from the Pilbara region. Figure 2 shows the distribution of the analyses within the region. Appendix 1 contains listings of the individual components of the data set.

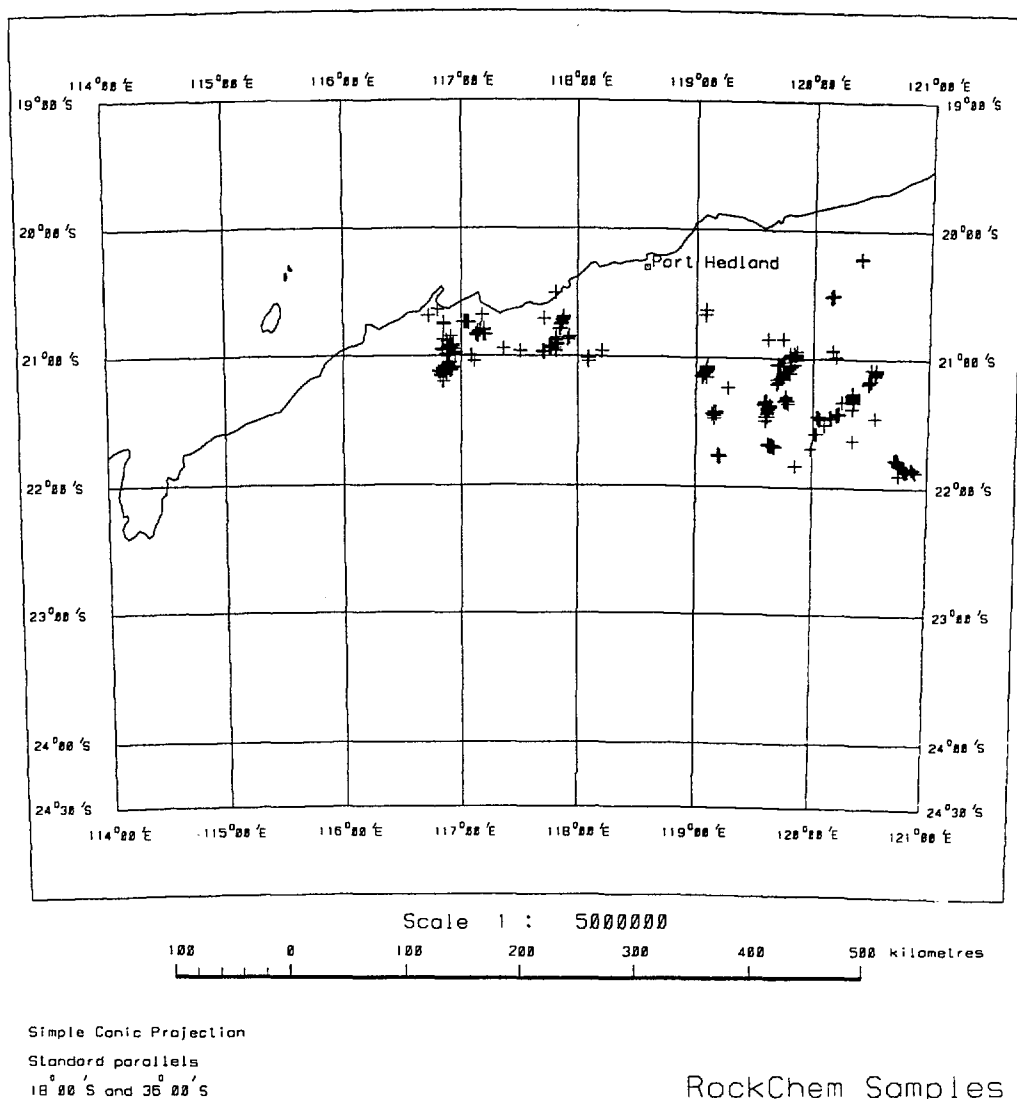


Figure 2. Rockchem samples in the Pilbara region.

Pilbara Block Database

Database type: regional

General Selection Criteria:

Field = regiono *Entry* = 31

Data description:

This database comprises 1386 analyses belonging to two main groups.

- A suite of 996 samples collected during 1975, 1976, and 1980 in conjunction with a joint BMR-GSWA study of Archaean greenstone and late Archaean plateau volcanic sequences. The data include analyses of volcanic rocks from the Warrawoona Group (581 analyses), the Gorge Creek Group (96 analyses), Whim Creek Group (112 analyses), and Fortescue Group (175 analyses).
- A suite of 66 mafic and ultramafic rock samples from several late Archaean to early Proterozoic hypabyssal and plutonic bodies, mostly in the west Pilbara, as part of a reconnaissance survey to assess the potential for platinum group element mineralisation.
- In a follow up program to the 1983 reconnaissance survey, detailed sampling was carried across a number of layered Archean mafic-ultramafic intrusions of the west Pilbara Block. These included the: Munni Munni, Mount Sholl, Andover, Maitland, and Radio Hill complexes.

Bibliography:

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- Hoatson, D.M., and Keays, R.R. 1989. Formation of platiniferous sulfide horizons by crystal fractionation and magma mixing in the Munni Munni layered intrusion, West Pilbara Block, Western Australia. *Economic Geology*, 84.
- Sun, S.S., Wallace, D.A., Hoatson, D.M., Glikson, A.Y., and Keays, R.R. 1991. Use of geochemistry as a guide to platinum group element potential of mafic-ultramafic rocks: examples from the west Pilbara Block and Halls Creek Mobile Zone, Western Australia. *Precambrian Research*, 50, 1-35.
- Wallace, D.A., and Hoatson, D.M. 1990. Petrology and whole-rock geochemistry of selected mafic and ultramafic suites from the Pilbara and Halls Creek Mobile Zone, Western Australia. *Bureau of Mineral Resources, Geology and Geophysics, Australia, Record* 1990/46.

3 . STRUCTURE OF ROCKCHEM DATABASE

The ROCKCHEM database contains seven main tables of data and eleven associated 'authority' tables. The names of the tables are as follows and full definitions are listed in Appendix 2.

Table Name	Contents
Main Tables	
SAMPLES	Samples and their locations and provenance
SAMPLESPLITS	Sample splits and their storage
MAJORS	Major element analyses in weight percentages of oxides
TRACES	Trace element analyses in parts per million
PPB	Trace element analyses in parts per billion
ROCKPROPS	Density and magnetic rock properties
REFERENCES	Bibliographic references

Authority tables

ORIGINATORS	List of valid contributors
COUNTRIES	List of valid countries
STATES	List of valid Australian States
REGIONS	List of valid regions
HMAPS	List of valid 1:100 000 maps
ROCKTYPES	List of valid rock types
STOREBOXES	List of valid boxes in BMR Museum
SOURCES	List of valid analytical laboratories
METHODS	List of valid analytical methods
MAXNOS	Table for highest index number in the database

The fields in the main tables are described in section 4. The authority tables are described in section 5. They generally consist of a number and a text field. For example, the REGIONS table consists of a region number and a region name (see Appendix 2). The region names in this table are unique. Each region appears once, and only once, in this table, and nowhere else in the database. The SAMPLES table refers ('relates') to the region name via its associated number.

4. DESCRIPTION OF THE MAIN TABLES

4.1 THE SAMPLES TABLE

This table contains information about samples and their provenance. The Samples Block contains the following relational fields - ORIGINATORS, ROCKTYPES, COUNTRIES, STATES, REGIONS, HMAPS, and REFERENCES (up to 5 different references can be entered for each sample). With each authority field, there is an associated table containing the value pointed to by a number or in the case of COUNTRIES, a 3-letter mnemonic. The number (or mnemonic) is the only information stored in the SAMPLES table, the values are stored separately in the relevant authority table.

All fields are either mandatory or optional. All BMR users must enter the mandatory fields before the geochemical data can be entered.

Description of Fields:

Origno - Mandatory relational field of 5 digits. The originator is represented by a number and the full name is recorded in the relational 'ORIGINATORS' table. The originator is generally the person or organization that collects the sample and/or submits it for laboratory work. The main purpose of this field is to ensure a unique combination of originator and sample number.

Sample Number - Mandatory field of 16 characters. Any combination of letters and numbers may be entered, provided that it is unique to the originator. All BMR samples should have registered 8 digit numbers, which should be unique. The first two digits in the BMR sample number refer to the year in which the sample was collected, the next two digits refer to a region in Australia (e.g. Arunta, Pine Creek), and the remaining four numbers are used by individuals belonging to that project at their discretion.

Field Number - Optional field of 16 characters. This field is designed to accommodate any alternative numbering systems that might apply to a sample or group of samples. For example, some samples are given field numbers that differ from the final registered numbers.

Group or Batholith - Optional field of 64 characters, giving the name of the stratigraphic group or igneous batholith from which the sample was collected.

Subgroup or Suite - Optional field of 64 characters, giving the name of the stratigraphic subgroup or igneous suite pertaining to the sample.

Stratigraphic Formation - Optional field of 64 characters, giving the relevant stratigraphic unit at formation level.

Stratigraphic Member - Optional field of 64 characters for the name of a stratigraphic member, if appropriate.

Stratigraphic Height - Optional number field with up to two decimal places. Designed for samples from measured stratigraphic sections.

Map Symbol - Optional field of 10 characters: the letter symbol used on 1:100 000 or 1:250 000 geological maps for the rock unit from which the sample was collected.

Rock Type - Mandatory relational field of 5 digits. See the description of the authority tables for the list of 18 permissible rock types, 1 being 'unknown'.

Lithology - Optional field of 64 characters for a full lithological description.

Grouping - Optional field of 22 characters to allow the user to supply other divisions for samples, for example, the alteration zones of an ore body.

Age - Optional field of 64 characters for the geological age, e.g., late Ordovician. If known, the absolute age is included in brackets, e.g., early Proterozoic (1860 Ma).

References - 5 optional relational numeric fields of 5 digits each. The full reference is listed in the REFERENCES table.

Country - Mandatory relational field of 3 capital letters. The default value is 'AUS'.

State - Relational field of 3 capital letters, mandatory if country is Australia. Only the standard capital letter abbreviations for Australian states can be entered in this field, and it cannot be used for other countries.

Region - Mandatory relational field of 5 digits. Only those regions in the REGIONS table may be entered. A region is a recognised geological province or area such as the Lachlan Fold Belt, Mount Isa Inlier, or Carnarvon Basin. As regions may overlap one another, the region that is entered is dependent on the purpose for which the sample was collected.

Geographic Area - Optional 64 character field for the name of the geographic area (e.g., valley, plain, mountain range) from which the sample comes. Examples are 'Newcastle Range' and 'Tuggeranong Valley'. Another purpose for which this field is used is for subprovinces of major regions (e.g., the Leichhardt River Fault Trough of the Mount Isa Inlier).

Locality - Optional 64 character field for a description of the sample site to aid in its relocation in the field. For example, '5.5km NW of Brown's Bore, on east bank of dry creek'.

1:100 000 Map - Relational field of 4 digits, mandatory if country is Australia. The number supplied must identify one of the standard series 1:100 000 map in the HMAPS table. In insert or update mode, the name may be entered and the number retrieved automatically. Only the map number is stored in the SAMPLES table.

Grid Reference - Field of 6 digits, mandatory if 1:100,000 map name is given. The 6 digit reference required is that described on the face of Australian 1:100 000 maps. The grid reference given must be metric and on the Australian National Spheroid.

Decimal Latitude - Field of 8 digits, mandatory if sample is not from Australia. Up to 6 digits may follow the decimal point. For most samples this field has been entered using a BMR program called 'GetLat', which calculates latitudes and longitudes from the 1:100 000 maps and metric grid references.

North or South - Single character field, 'S' by default. Only 'N' or 'S' may be entered.

Decimal Longitude - Field of 9 digits, 7 of which may follow the decimal point. Otherwise as for latitude.

East or West - Single character field 'E' by default. Only 'E' or 'W' may be entered. Make sure this field is correctly filled in for samples from outside Australia (e.g.

Antarctica). It must be given as 'W' for latitudes measured west of the Greenwich Meridian.

Drill Hole - Optional field of 22 characters. If the sample is from a drill hole, its name, or some other identification, is required.

Depth in Metres - Optional field of 10 characters. The depth of the sample from within the drill hole. A character field is used here to enable depth ranges to be entered, e.g., '112- 115' - as some samples are collected from finite depth intervals.

Other Data - Optional field of 64 characters. May be used for any data not covered by the above fields that the originator feels are relevant.

Entry Date - Invisible date field. This field automatically assumes the date that the sample data is inserted into the SAMPLES table via the form.

4.2 THE SAMPLE SPLITS TABLE

This table indicates the sample type (whole rock geochemistry, geochronology, thin section, hand specimen etc.) and the number of the box that the sample is stored in within the BMR museum.

Description of Fields:

Origno - Mandatory relational field of 5 digits. The originator is represented by a number and the full name is recorded in the relational 'Originator Table'. The originator is generally the person or organization that collects the sample and/or submits it for laboratory work. The main purpose of this field is to ensure a unique combination of originator and sample number.

Sample Number - Mandatory field of 16 characters. Any combination of letters and numbers may be entered, provided that it is unique to the originator. All BMR samples should have registered 8 digit numbers, which should be unique. The first two digits in the BMR sample number refer to the year in which the sample was collected, the next two digits refer to a region in Australia (e.g. Arunta, Pine Creek), and the remaining four numbers are used by individuals belonging to that project at their discretion.

Sample Type - Mandatory relational field of 5 digits. The sample type entered must be one of those in the SAMPLETYPES table, e.g., 'whole-rock analysis' or 'geochronology'.

Storebox - Optional numeric field of up to 5 digits. This number must correspond to a Storebox number already in the STOREBOXES table. Although most existing samples do not yet have a storebox number, it is a requirement for all new samples housed in the BMR museum to have a storebox number.

4.3 THE MAJORS TABLE

The majors table contains all of the major element data with all values expressed as weight percentages of oxides.

Description of Fields:

Sample Number - Mandatory field of 16 characters. Any combination of letters and numbers may be entered, provided that it is unique to the originator. All BMR samples should have registered 8 digit numbers, which should be unique. The first two digits in the BMR sample number refer to the year in which the sample was collected, the next two digits refer to a region in Australia (e.g. Arunta, Pine Creek), and the remaining four numbers are used by individuals belonging to that project at their discretion.

Analysis Number - Mandatory field of up to 5 digits. Primary key field assigned by the system; it cannot be inserted or updated. It may be used to query the tables.

Origno - Mandatory relational field of 5 digits. The originator is represented by a number and the full name is recorded in the relational 'Originator Table'. The originator is generally the person or organization that collects the sample and/or submits it for laboratory work. The main purpose of this field is to ensure a unique combination of originator and sample number.

Source Number - Mandatory relational field of up to 5 digits. The 'source' of an analysis is normally the laboratory that performed the analysis or the person or organization that provided the data (e.g., BMR, BMR restricted, BHP, B.W. Chappell). The SOURCES table contains the authority list of all sources.

Method Number - Mandatory relational field of up to 5 digits describing the method by which the laboratory analysis was performed. The details of the analytical techniques used are in the METHODS table.

Major Elements - Optional numeric fields of up to 4 digits, two after the decimal point. Automatically right justified. Detection limit values are entered as negative numbers and it is impossible to enter '<' or 'n.d.'.

***Fe₂O₃** - This field is reserved for total iron as Fe₂O₃. It should be entered only for analyses in which the oxidation state of iron has not been determined. Where this field is entered, the fields for FeO and Fe₂O₃ should be left empty.

Rest - Trace elements are converted to oxide percent, summed and then added to the total.

Total - Optional numeric field of up to 5 digits. This is for an entered total.

Calculated Total - The value in this field is automatically calculated from the data in the major element fields. It cannot be entered and is not a database field. Except where detection limit values are involved, this field provides a check on the entered total;

the two should coincide. Because detection limit values are entered as negative numbers, they are subtracted from the calculated total.

4.4 THE TRACES TABLE

This table includes all trace elements in ppm.

Description of Fields:

Sample Number - Mandatory field of 16 characters. Any combination of letters and numbers may be entered, provided that it is unique to the originator. All BMR samples should have registered 8 digit numbers, which should be unique. The first two digits in the BMR sample number refer to the year in which the sample was collected, the next two digits refer to a region in Australia (e.g. Arunta, Pine Creek), and the remaining four numbers are used by individuals belonging to that project at their discretion.

Analysis Number - Mandatory field of up to 5 digits. Primary key field assigned by the system; it cannot be inserted or updated. It may be used to query the tables.

Origno - Mandatory relational field of 5 digits. The originator is represented by a number and the full name is recorded in the relational 'Originator Table'. The originator is generally the person or organization that collects the sample and/or submits it for laboratory work. The main purpose of this field is to ensure a unique combination of originator and sample number.

Source Number - Mandatory relational field of up to 5 digits. The 'source' of an analysis is normally the laboratory that performed the analysis or the person or organization that provided the data (e.g., BMR, BMR restricted, BHP, B.W. Chappell). The SOURCES table contains the authority list of all sources.

Method Number - Mandatory relational field of up to 5 digits describing the method by which the laboratory analysis was performed. The details of the analytical techniques used are in the METHODS table.

Trace Elements - Optional numeric fields of up to 8 digits, two of which may be after a decimal point. The fields are automatically right justified and as is the case for major elements, a negative entry signifies a detection-limit value.

4.5 THE PPB (parts per billion) TABLE

This table includes all trace elements in ppb.

Description of Fields:

Sample Number - Mandatory field of 16 characters. Any combination of letters and numbers may be entered, provided that it is unique to the originator. All BMR samples should have registered 8 digit numbers, which should be unique. The first

two digits in the BMR sample number refer to the year in which the sample was collected, the next two digits refer to a region in Australia (e.g. Arunta, Pine Creek), and the remaining four numbers are used by individuals belonging to that project at their discretion.

Analysis Number - Mandatory field of up to 5 digits. Primary key field assigned by the system; it cannot be inserted or updated. It may be used to query the tables.

Origno - Mandatory relational field of 5 digits. The originator is represented by a number and the full name is recorded in the relational 'Originator Table'. The originator is generally the person or organization that collects the sample and/or submits it for laboratory work. The main purpose of this field is to ensure a unique combination of originator and sample number.

Source Number - Mandatory relational field of up to 5 digits. The 'source' of an analysis is normally the laboratory that performed the analysis or the person or organization that provided the data (e.g., BMR, BMR restricted, BHP, B.W. Chappell). The SOURCES table contains the authority list of all sources.

Method Number - Mandatory relational field of up to 5 digits describing the method by which the laboratory analysis was performed. The details of the analytical techniques used are in the METHODS table.

Trace Elements - Optional numeric fields of up to 8 digits, 3 of which may be after a decimal point. The fields are automatically right justified and as is the case for major and trace elements, a negative entry signifies a detection-limit value.

4.6 THE REFERENCES TABLE

The bibliographic References Form accesses the REFERENCES table. The authors and year fields are spanned by a concatenated unique index. This means that no two references can have the same values in the author(s) and year fields.

Description of Fields:

Reference Number - Mandatory field of up to 5 digits. A monotonically increasing primary key field assigned by the system. The reference number in the fields in the samples table refer to this field.

Other ID - Optional field of up to 16 characters. Any other identifying sequence that the user may care to apply.

Username - Mandatory field of up to 16 characters.

Authors - Mandatory field of up to 128 characters.

Year - Mandatory field of up to 16 characters.

Title - Optional field of up to 240 characters.

Source - Optional field of up to 240 characters - the journal name, volume and page numbers.

5. DESCRIPTION OF AUTHORITY TABLES

5.1 THE 1:100 000 MAPS FORM

The 1:100 000 maps form table has the underlying HMAPS table as an important table in its own right.

Description of Fields:

100K Map Number - The unique four digit number for any 1:100 000 map sheet from Australia.

1M Map ID - The 1:1 000 000 map sheet in which the 1:100 000 sheet lies. This is identified by two capital letters followed by two numbers, e.g., 'SF54'. The two digits are the UTM zone, which is needed to convert metric references to latitude and longitude.

250K Map Number - Up to 2 digits identifying the 1:250 000 map sheet from 16 covering each 1:1 000 000 map area. The full 1:250 000 map ID is obtained by joining the 1:1 000 000 map ID to this number, e.g., SF54-12, which is the Winton 1:250 000 map sheet, in Queensland. Note that the 1:250 000 map sheets in Tasmania are the theoretical ones, not the shifted ones actually published.

100K Map Name - Up to 22 upper case characters for the name of the 1:100 000 map sheet identified by the 100K Map Number. There are many offshore sheets which are named 'UNNAMED'.

100K Map NW Corner Lat. & Long. - The decimal latitude and longitude of the northwest corner of the 1:100 000 map sheet. It is possible, using a single SQL*Plus command, to make use of this field to select a 1:100 000 map name for any given latitude and longitude.

100K Map AMG Ref. SW Corner Easting and Northing - The metric easting and northing of the southeast corner of the 1:100 000 map sheet. These values are necessary to convert a 6-digit grid reference obtained from a 1:100 000 map to the full Australian Map Grid metres east and metres north.

5.2 COUNTRIES TABLE

This table is for recognised countries. All have an associated ID.

ID	Country
AUS	Australia
PNG	Papua-New Guinea
SI	Solomon Islands
ANT	Antarctica
UK	United Kingdom
SEA	International Waters

5.3 STATES TABLE

This table is for the states of Australia only and all have a set ID.

ID	STATE
???	unknown
ACT	Australian Capital Territory
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
SA	South Australia
TAS	Tasmania
VIC	Victoria
WA	Western Australia

5.4 ORIGINATOR TABLE

This table refers to the collector of the sample in the field. With some BMR authors, it is possible to refer to original sample note books which are stored within BMR so as to obtain more precise location descriptions of any samples that are of interest.

The following list gives the key for the entries in this authority table.

ORIGNO	ORIGINATOR
1	unknown
2	Blake, D.H.
3	Branch, C.D.
4	Bultitude, R.J.
5	Gardner, C.
6	Croxford, W.
7	Cruikshank, B.I.
8	Hoatson, D.M.
10	Dallwitz, W.B.
11	Derrick, G.M.
12	Duff, B.
13	Ellis, D.J.
14	England, R.N.
15	Ewers, G.R.
16	Warren, R.G.
17	Glikson, A.Y.
18	Tanaka, H.
19	Hill, R.M.
20	Holmes, R.D.

21	Hutton, L.J.
22	Lambert, I.
23	Knutson, J.
24	Jaques, A.L.
25	Chapple, K.
27	Lewis, J.D.
28	Etheridge, M.
29	Mackenzie, D.E.
30	McNaughton, N.
31	Mitchell, J.M.
32	Mock, C.M.
33	Higgins, N.C.
34	Oversby, B.S.
35	Cook, P.
36	Stuart-Smith, P.G.
37	Page, R.W.
38	Plumb, K.A.
39	Valenta, R.
40	Needham, R.S.
41	Santul, J.
42	Sheraton, J.W.
43	Smith, S.E.
44	Tunks, A.
45	Wallace, D.A.
46	Willmott, W.F.
47	Wilson, I.H.
48	Withnall, I.W.
49	Wyborn, D.
50	Wyborn, L.A.I.
51	Bain, J.H.C.
52	Johnson, R.W.
53	Williams, P.R.
54	Miller, A.
55	Bettenay, L.
56	Black, L.P.
57	Pederson, C.P.
58	Ferguson, J.
59	Hegge, M.R.
60	Wilkes, P.G.
61	Roberts, W.M.B.
62	Walpole, B.
63	Joplin, G.
64	Crick, I.
65	Hills, J.
66	Rhodes, J.
67	Smart, P.
68	Sweet, I.P.
69	Shaw, R.D.
70	Stewart, A.J.
71	Wyche, S.
72	Watchman, A.
73	Stuart, J.E.
74	Stratton, J.
75	Duggan, M.B.
76	Yeates, A.N.
77	ANU RSES
78	Allen, A.R.
79	Bofinger, V.M.
80	Gee, R.D.

81	De Laeter, J.R.
82	Cooper, J.A.
83	Williams, S.J.
84	Windrim, D.P.
85	Gray, C.M.
86	Ludwig, K.R.
87	Currie, K.L.
88	Chin, R.J.
89	Mortimer, G.E.
90	Marjoribanks, R.W.
91	Webb, A.W.
92	Langworthy, A.P.
93	SADME
94	Jagodzinski, E.A.
95	Compston, W.
96	Freeman, M.J.
97	Offe, L.A.
98	Bagas, L.
99	Joklik, G.F.
100	Korsch, R.
101	Dobos, S.K.
102	Foden, J.D.
103	Roarty, M.J.
104	Pidgeon, R.T.
105	W.A. Geological Survey
106	Southgate, P.N.
107	Kralik, M.
108	Richards, J.R.
109	McDougall, I.
110	Turek, A.
111	Collins, W.J.
112	Kinny, P.D.
113	Heinrich, C.A.
114	Hill, R.I.
115	Henderson, G.A.M.
116	Johnston, C.
117	Richards, D.
118	Bailey, J.
119	Blewett, R.S.
120	Chappell, B.W.C.
121	Adams, C.J.
122	Turner, N.J.
123	Perason, P.J.
124	Rao, C.P.
125	McCulloch, M.T.
126	Vanderhor, F.
127	Rattenbury, M.S.
128	Young, D.N.
129	Arriens, P.A.

5.5 REGIONS TABLE

The following list of regions was initially compiled from all the existing databases. However, for the purpose of database management, only a select number of major regions are now used for the Australian section of this data set. Those that have been used with

the regional databases are marked * in the list below. Most of those Australian regions listed below now entered in the field “Geogarea”; Antarctic regions used are marked +.

REGIONO	REGION
1	unknown
2	Adelaide Fold Belt
3	Albany-Fraser Province
4	Arunta Block *
5	Bunger Hills +
6	Cape York Peninsula
7	Carnarvon Basin
8	Commonwealth Bay +
9	Cummins Range
10	Davenport Province *
11	Denman Glacier +
12	East Kimberley
13	Enderby Land +
14	Gawler Craton
15	George V Land +
16	Georgetown Inlier
17	Halls Creek Inlier *
18	Kemp Land +
19	Lachlan Fold Belt *
20	Lawn Hill Platform
21	Mawson Coast +
22	McArthur Basin
23	Mount Isa Inlier *
24	Northern Prince Charles Mountains +
25	NE Queensland *
26	NE Tasmania
27	NW Tasmania
29	North Victoria Land +
30	North Kimberley
31	Pilbara Block *
32	Pine Creek Inlier *
33	Prydz Bay Coast +
34	Southern Prince Charles Mountains +
35	Stuart Shelf *
36	Granites-Tanami Block *
37	Tasman Fold Belt
38	Tasmania
39	Tennant Creek *
40	Turee Creek
41	Tuross
42	Vestfold Hills +
43	West Kimberley
44	Wilhelm II Land +
45	Wilkes Land +
46	Willyama Block
47	Yilgarn Block
48	Hammersley Basin
49	SE Tasmania
50	SW Tasmania
51	New Georgia Island
52	Eastern Goldfields
53	Capricorn Orogen *
54	Ashburton Trough
55	Gascoyne Province
56	Glengarry Sub-basin

57	Earaheedy Sub-basin
58	Murphy Tectonic Ridge
59	South Nicholson Basin
60	Westmoreland Region
61	New England Fold Belt
62	Sydney Basin
63	Admiralty Islands
64	Birrindudu Basin
65	Bangemall Basin
66	Musgrave Block
67	Paterson Province
68	Amadeus Basin
69	Ammaroodinna Inlier
70	Peake Denison Inlier
72	Georgina Basin
73	Curnamona Inlier
74	Carpentaria Province
75	Northampton Block
76	Houghton Inlier
77	Bougainville
78	Tabar-Feni
79	New Britain
80	St. Andrews Strait
81	Fly Highlands
82	Manus Basin
83	Eastern Papua
84	Officer Basin
85	Woodlark Basin

5.6 ROCK TYPES TABLE

This table provides a coarse subdivision of samples based on broad rock types. It was initiated primarily for database management and block retrieval, and for future online extraction of data. For example, this table can be used to extract all mafic extrusive rocks from the database or all alkaline rocks. The following gives a list of the 18 permitted rock types:

ROCKNO	ROCKTYPE
1	unknown
2	felsic intrusive
3	intermediate intrusive
4	mafic intrusive
5	felsic extrusive
6	intermediate extrusive
7	mafic extrusive
8	ultramafite
9	alkaline igneous
10	clastic sediment
11	chemical sediment
12	metabasite
13	felsic gneiss
14	metasediment
15	metasomatite
16	ore
17	regolith
18	mixed clastic/chemical sediment

5.7 SAMPLE TYPES TABLE

This table gives an indication of the nature of work that has been carried out on each individual sample.

SAMPLETYPENO	SAMPLETYPE
1	unknown
2	whole-rock geochemistry
3	geochronology
4	hand specimen
5	thin section
6	geochronology K-Ar
7	geochronology Ar-Ar
8	geochronology Rb-Sr
9	geochronology Sm-Nd
10	geochronology U-Pb minerals
11	geochronology U-Pb SHRIMP
12	geochronology Pb-Pb
13	geochronology Pb-Pb ores
14	geochronology Lu-Hf
15	geochronology Re-Os
16	geochronology fission-track
17	geophysical properties
18	geochemical rock chip samples

5.8 SOURCES TABLE

This table gives the laboratory or organisation which analysed the sample.

SOURCENO	SOURCE
1	unknown
2	ANU
3	Adelaide University
4	AMDEL
5	BMR
6	BMR restricted
7	CSIRO/BMR
8	Macquarie University
9	Melbourne University
10	NTGS (AMDEL)
11	WA Govt. Chem. Lab.
12	WA/BMR Restricted
13	University of Queensland
14	James Cook University of North Queensland
15	Tasmanian Department of Mines
16	University of Tasmania
17	Queensland Department of Mines
18	BGR (Bundesanstalt fur Geowissenschaften und Rohstoffe)
19	Labtech Pty. Ltd., WAIT, WA Govt. Chem. Lab., Perth.
20	Institute for Petrology, Copenhagen University, Denmark
21	ANALABS
22	BMR/CRAE - T.Stachel

5.9 METHODS TABLE

This table describes the analytical methods used in deriving the analyses.

METHODNO	METHOD
1	unknown
2	XRF (Norrish & Hutton, 1969); FeO Vol.; LOI Grav.
3	XRF (Norrish & Hutton, 1969); FeO Vol.; H ₂ O+, H ₂ O-, & CO ₂ Grav.
4	XRF (Norrish & Chappell, 1977); Ag, Be, Co, Li by AAS
5	XRF (Norrish & Chappell, 1977); Ag, Be, Co, Cu, Li, Ni, Zn by AAS
6	XRF (Norrish & Hutton, 1969); FeO, H ₂ O(total), CO ₂ by AMDEL
7	XRF (Norrish Chappell 1967); Li Be Cr Co Ni Cu Zn Sn AAS F AMDEL
8	Rb, Sr by XRF (Norrish & Chappell, 1967); Ni, Co, V by AAS
9	XRF (Norrish & Chappell, 1977); FeO vol.; LOI grav.
10	XRF (N & C, 1977); REE Hf Ta Cr Sc Sb Cs INA; Th U Gamma spectrm
11	XRF (N & C, 1977); REE Hf Ta Sb Cs INAA; U delayed neutron count
12	XRF (Norrish & Chappell, 1977).
13	XRF (Norrish & Chappell, 1977); Co Cu Ni Pb Zn by emiss.
14	ICP,AES Inductively Coupled Plasma, Atomic Emission
15	XRF (N & C, 1977) at ANU; Na, K by AAS (JCUNQ).
16	XRF(N&C 1977) UQ; REE Th U Pb Hf Ba Cs Sn Mo Nb Y Bi W MS7 RSES.
17	AMDL 'wet' chem. +/- XRF (N & H, 1969)?
18	Tas. Dept. Mines Assay Labs Launceston: "classical methods".
19	J. Klominsky & D.I. Groves: X-ray spectrography.
20	XRF (Norrish & Chappell, 1977); REE,Sc,Hf,Th,U INAA
21	XRF (N & C, 1977); REE ion-exchange/XRF (Robinson & others,1986)
22	AMACHEM Nickel sulfide assay- neutron activation.
23	XRF (Norrish & Hutton, 1969) on 1:1 purified silica mix
24	AAS
25	ANALABS: fire assay, Pb collection, carbon rod finish (30g samp)
26	ANALABS: fire assay fusion, AAS finish (30g sample)
27	ANALABS: combination of methodno = 25 (Pd & Pt) and 26 (Au)
28	RNAA from Melbourne University
29	ANALABS: fire assay, lead collection; ICP-MS finish
30	Direct-reading optical spectrograph (DROS), BMR.

Appendix 1 - Listings of the components of the Pilbara Data Set

A1.1 Samples assigned to Stratigraphic Groups.

STRATGROUP	COUNT (*)
unassigned	92
Andover Complex	45
Chiratta Batholith	4
Cooya Pooya Dolerite	11
Dingo Complex	166
Fortescue Group	166
Gidley Granophyre	8
Gorge Creek Group	104
Maitland Complex	49
Mount Sholl Complex	35
Munni Munni Complex	125
Radio Hill Complex	77
Warrawoona Group	537
Whim Creek Group	114
unnamed dyke	6

A1.2 Samples assigned to Subgroups.

SUBGROUP	COUNT (*)
unassigned	938
Salgash Subgroup	172
Talga Talga Subgroup	276

A1.3 Samples assigned to Stratigraphic Units

STRATUNIT	COUNT (*)
unassigned	294
Apex Basalt	84
Charteris Basalt	27
Cleaverville	1
Duffer Formation	134
Eastern Munni Munni dyke	2
Euro Basalt	21
Gabbroic Zone	57
Honeyeater Basalt	69
Kylena Basalt	68
Louden Volcanics	45
Maddina Basalt	17
Mallina Formation	7
McPhee Formation	2
Mons Cupri Volcanics	18
Mount Ada Basalt	114
Mount Brown Rhyolite	12
Mount Roe Basalt	52

Negri Volcanics	24
North Star Basalt	110
Nymerina Basalt	29
Pinderi Hills dyke	1
Southern dyke	1
Talga Talga Volcanics	18
Tower Formation	1
Ultramafic Zone	121
Undivided	35
Unknown	1
Warrambie Basalt	14
Western extension of Eastern Munni Munni dyke	1
Wyman Formation	23
Zebra Hill dyke	1

A1.4 Samples assigned to Stratigraphic Members.

STRATMEMBER	COUNT (*)
unassigned	1217
Subzone A	57
Subzone A'	9
Subzone B	20
Subzone C	13
Subzone D	10
Subzone E	10
Subzone F	13
Subzone G	11
Subzone H	6
Subzone I	20

A1.5 Samples assigned by Rocktype.

ROCKNO	ROCKTYPE	COUNT (*)
2	felsic intrusive	7
4	mafic intrusive	408
5	felsic extrusive	177
6	intermediate extrusive	129
7	mafic extrusive	460
8	ultramafite	177
12	metabasite	10
15	metasomatite	2
16	ore	16

A1.6 Samples assigned by Chronological Age.

AGE	COUNT (*)
unassigned	204
Archaean	45
Archaean (~2700 Ma)	166
Archaean (~2900 Ma)	377
Archaean (~3000 Ma)	96
Archaean (~3300 Ma)	498

A1.7 Samples assigned by Geographic Area.

<u>GEOGAREA</u>	<u>COUNT (*)</u>
unassigned	148
Roebourne	1
central Pilbara	109
east Pilbara	652
west Pilbara	476

A1.8 Samples assigned to 1:100 000 Map Sheet Areas.

<u>MAPNAME</u>	<u>MAPNO</u>	<u>COUNT (*)</u>
COONGAN	2856	49
COOYA POOYA	2355	4
DAMPIER	2256	174
EASTERN CREEK	3054	57
MARBLE BAR	2855	317
MOUNT EDGAR	2955	114
MUCCAN	2956	39
NORTH SHAW	2755	93
NULLAGINE	2954	20
PINDERI HILLS	2255	210
ROEBOURNE	2356	104
SATIRIST	2555	7
SHERLOCK	2456	109
SPLIT ROCK	2854	48
TAMBOURAH	2754	16
YILGALONG	3055	24

A1.9 Samples assigned to Drillholes.

<u>DRILLHOLE</u>	<u>COUNT (*)</u>
unassigned	1309
84RHPD208	26
85RHPD234	1
86RHPD249	19
86RHPD252	1
87RHPD262	17
DDH 72-11	3
DDH 72-19	4
DDH 72-5	6

Appendix 2 - Rockchem Database Definitions

A2.1 Samples Table Description:

```
CREATE SPACE DEFINITION SPACE_GCSAMPLES
```

```
    DATAPAGES    ( INITIAL      2000,  
                  INCREMENT    500,  
                  MAXEXTENTS  9999,  
                  PCTFREE     25    )
```

```
    INDEXPAGES   ( INITIAL      200,  
                  INCREMENT    100,  
                  MAXEXTENTS  9999  )
```

```
    PARTITION C;
```

```
CREATE TABLE SAMPLES (
```

ORIGNO	NUMBER	(5,0)	NOT NULL,
SAMPNO	CHAR	(16)	NOT NULL,
FIELDNO	CHAR	(16),	
STRATGROUP	CHAR	(64),	
SUBGROUP	CHAR	(64),	
STRATUNIT	CHAR	(64),	
STRATMEMBER	CHAR	(64),	
STRATHEIGHT	NUMBER	(8,2),	
MAPSYMBOL	CHAR	(10),	
ROCKNO	NUMBER	(5,0),	
LITHOLOGY	CHAR	(64),	
GROUPING	CHAR	(22),	
AGE	CHAR	(64),	
REFNO1	NUMBER	(5,0),	
REFNO2	NUMBER	(5,0),	
REFNO3	NUMBER	(5,0),	
REFNO4	NUMBER	(5,0),	
REFNO5	NUMBER	(5,0),	
COUNTRYID	CHAR	(22),	
STATE	CHAR	(10),	
REGIONO	NUMBER	(5,0),	
GEOGAREA	CHAR	(64),	
LOCALITY	CHAR	(64),	
MAPNO	NUMBER	(5,0),	
AIRPHOTO	CHAR	(22),	
GRIDREF	CHAR	(10),	
DLAT	NUMBER	(8,6),	
NS	CHAR	(1),	
DLONG	NUMBER	(9,6),	
EW	CHAR	(1),	
DRILLHOLE	CHAR	(22),	
DEPTH	CHAR	(10),	
OTHERDATA	CHAR	(64),	
ENTRYDATE	DATE)

```
SPACE SPACE_GCSAMPLES;
```

```
CREATE UNIQUE INDEX ORIGSAMP ON SAMPLES ( ORIGNO, SAMPNO );
```

```
CREATE          INDEX SAMPLENO ON SAMPLES ( SAMPNO );
```

```
CREATE          INDEX REGIONS ON SAMPLES ( REGIONO );
```

```
CREATE          INDEX HMAPS ON SAMPLES ( MAPNAME );
```

A2.2 Samplesplits Table Description:

```
CREATE SPACE DEFINITION SPACE_GCSPLITS
  DATAPAGES    (  INITIAL      500,
                  INCREMENT    250,
                  MAXEXTENTS   9999,
                  PCTFREE      25    )
  INEXPAGES    (  INITIAL      150,
                  INCREMENT    100,
                  MAXEXTENTS   9999  )

  PARTITION C;
```

```
CREATE TABLE SAMPLES (
  ORIGNO          NUMBER          (5,0)      NOT NULL,
  SAMPNO          CHAR            (16)        NOT NULL,
  SAMPTYPENO      NUMBER          (5,0)        NOT NULL,
  STOREBOXNO      NUMBER          (5,0)        )
SPACE SPACE_GCSPLITS;
```

```
CREATE INDEX SAMPORIG ON SAMPLESPLITS ( ORIGNO, SAMPLENO );
CREATE INDEX SPLITYPE ON SAMPLESPLITS ( SAMPTYPENO );
```

A2.3 Majors Table Description:

```
CREATE SPACE DEFINITION SPACE_GCMAJORS
  DATAPAGES    (  INITIAL      1000,
                  INCREMENT    400,
                  MAXEXTENTS   9999,
                  PCTFREE      10    )
  INEXPAGES    (  INITIAL      200,
                  INCREMENT    100,
                  MAXEXTENTS   9999  )

  PARTITION C;
```

```
CREATE TABLE MAJORS (
  ORIGNO          NUMBER          (5,0)      NOT NULL,
  SAMPNO          CHAR            (16)        NOT NULL,
  ANALNO          NUMBER          (5,0)        NOT NULL,
  SOURCENO        NUMBER          (5,0),
  METHODNO         NUMBER          (5,0),
  SIO2             NUMBER          (4,2),
  TIO2             NUMBER          (4,2),
  AL2O3            NUMBER          (4,2),
  FE2O3TOT         NUMBER          (4,2),
  FE2O3            NUMBER          (4,2),
  FEO              NUMBER          (4,2),
  MNO              NUMBER          (4,2),
  MGO              NUMBER          (4,2),
  CAO              NUMBER          (4,2),
  NA2O             NUMBER          (4,2),
  K2O              NUMBER          (4,2),
  P2O5             NUMBER          (4,2),
  H2OPLUS          NUMBER          (4,2),
```

```

H2OMIN          NUMBER          (4,2),
CO2             NUMBER          (4,2),
LOI             NUMBER          (4,2),
REST           NUMBER          (4,2),
TOTAL           NUMBER          (5,2),
ENTRYDATE       DATE
SPACE SPACE_GCMAJORS;

CREATE UNIQUE INDEX MANALNO ON MAJORS ( ANALNO );
CREATE          INDEX MORIGSAMP ON MAJORS ( ORIGNO, SAMPNO);
CREATE          INDEX MSAMPLENO ON MAJORS ( SAMPNO );

```

A2.4 Traces Tables Description:

```

CREATE SPACE DEFINITION SPACE_GCTRACES
  DATAPAGES    ( INITIAL      1200,
                 INCREMENT    400,
                 MAXEXTENTS   9999,
                 PCTFREE      30   )
  INDEXPAGES    ( INITIAL      200,
                 INCREMENT    100,
                 MAXEXTENTS   9999 )
  PARTITION C;

CREATE TABLE TRACES    (
  ORIGNO          NUMBER          (5,0)          NOT NULL,
  SAMPNO          CHAR            (16)          NOT NULL,
  ANALNO          NUMBER          (5,0)          NOT NULL,
  SOURCENO        NUMBER          (5,0),
  METHODNO         NUMBER          (5,0),
  AG              NUMBER          (8,2),
  AL              NUMBER          (8,2),
  ARS             NUMBER          (8,2),
  AU              NUMBER          (8,2),
  B               NUMBER          (8,2),
  BA              NUMBER          (8,2),
  BE              NUMBER          (8,2),
  BI              NUMBER          (8,2),
  BR              NUMBER          (8,2),
  C               NUMBER          (8,2),
  CA              NUMBER          (8,2),
  CD              NUMBER          (8,2),
  CE              NUMBER          (8,2),
  CL              NUMBER          (8,2),
  CO              NUMBER          (8,2),
  CR              NUMBER          (8,2),
  CS              NUMBER          (8,2),
  CU              NUMBER          (8,2),
  DY              NUMBER          (8,2),
  ER              NUMBER          (8,2),
  EU              NUMBER          (8,2),
  F               NUMBER          (8,2),
  FE              NUMBER          (8,2),
  GA              NUMBER          (8,2),

```

GE	NUMBER	(8,2),
GD	NUMBER	(8,2),
HF	NUMBER	(8,2),
HG	NUMBER	(8,2),
HO	NUMBER	(8,2),
IR	NUMBER	(8,2),
K	NUMBER	(8,2),
LA	NUMBER	(8,2),
LI	NUMBER	(8,2),
LU	NUMBER	(8,2),
MG	NUMBER	(8,2),
MN	NUMBER	(8,2),
MO	NUMBER	(8,2),
NA	NUMBER	(8,2),
NB	NUMBER	(8,2),
ND	NUMBER	(8,2),
NI	NUMBER	(8,2),
OS	NUMBER	(8,2),
P	NUMBER	(8,2),
PB	NUMBER	(8,2),
PD	NUMBER	(8,2),
PR	NUMBER	(8,2),
PT	NUMBER	(8,2),
RB	NUMBER	(8,2),
S	NUMBER	(8,2),
SB	NUMBER	(8,2),
SE	NUMBER	(8,2),
SC	NUMBER	(8,2),
SI	NUMBER	(8,2),
SM	NUMBER	(8,2),
SN	NUMBER	(8,2),
SR	NUMBER	(8,2),
TA	NUMBER	(8,2),
TB	NUMBER	(8,2),
TE	NUMBER	(8,2),
TI	NUMBER	(8,2),
TH	NUMBER	(8,2),
TL	NUMBER	(8,2),
TM	NUMBER	(8,2),
U	NUMBER	(8,2),
V	NUMBER	(8,2),
W	NUMBER	(8,2),
Y	NUMBER	(8,2),
YB	NUMBER	(8,2),
ZN	NUMBER	(8,2),
ZR	NUMBER	(8,2),
ENTRYDATE	DATE)

SPACE SPACE_GCTRACES;

CREATE UNIQUE INDEX TANALNO ON TRACES (ANALNO);

CREATE INDEX TORIGSAMP ON TRACES (ORIGNO, SAMPNO);

CREATE INDEX TSAMPLENO ON TRACES (SAMPNO);

A2.5 ppb Table Description (elements in parts per billion):

```
CREATE SPACE DEFINITION SPACE_GSMALL
```

```
    DATAPAGES    ( INITIAL      50,
                  INCREMENT    50,
                  MAXEXTENTS  9999,
                  PCTFREE     25  )
    INDEXPAGES   ( INITIAL      20,
                  INCREMENT    12,
                  MAXEXTENTS  9999  )

    PARTITION C;
```

```
CREATE TABLE PPB    (
```

```
    ORIGNO          NUMBER          (5,0)      NOT NULL,
    SAMPNO           CHAR            (16)       NOT NULL,
    ANALNO           NUMBER          (5,0)      NOT NULL,
    SOURCENO         NUMBER          (5,0),
    METHODNO          NUMBER          (5,0),
    SE               NUMBER          (8,3),
    RB               NUMBER          (8,3),
    RU               NUMBER          (8,3),
    RH               NUMBER          (8,3),
    PD               NUMBER          (8,3),
    AG               NUMBER          (8,3),
    CS               NUMBER          (8,3),
    LA               NUMBER          (8,3),
    CE               NUMBER          (8,3),
    PR               NUMBER          (8,3),
    ND               NUMBER          (8,3),
    PM               NUMBER          (8,3),
    SM               NUMBER          (8,3),
    EU               NUMBER          (8,3),
    GD               NUMBER          (8,3),
    TB               NUMBER          (8,3),
    DY               NUMBER          (8,3),
    HO               NUMBER          (8,3),
    ER               NUMBER          (8,3),
    TH               NUMBER          (8,3),
    YB               NUMBER          (8,3),
    LU               NUMBER          (8,3),
    RE               NUMBER          (8,3),
    OS               NUMBER          (8,3),
    IR               NUMBER          (8,3),
    PT               NUMBER          (8,3),
    AU               NUMBER          (8,3),
    ENTRYDATE        DATE
)
```

```
CREATE UNIQUE INDEX PPBANALNO    ON PPB    ( ANALNO );
```

```
CREATE          INDEX PPBORIGSAMP ON PPB    ( ORIGNO, SAMPNO );
```

```
CREATE          INDEX PPBSAMPLENO ON PPB    ( SAMPNO );
```

A2.6 Rocktypes Table Description:

```
CREATE SPACE DEFINITION SPACE_GSMALL
```

```
    DATAPAGES    ( INITIAL      50,
                  INCREMENT    50,
```

```

                                MAXEXTENTS 9999,
                                PCTFREE     25    )
INDEXPAGES  ( INITIAL         20,
              INCREMENT       12,
              MAXEXTENTS      9999 )

PARTITION C;

CREATE TABLE ROCKTYPES (
  ROCKNO          NUMBER          (5,0)      NOT NULL,
  ROCKTYPE        CHAR            (64)       NOT NULL )
SPACE SPACE_GCSMALL;

```

A2.7 References Table Description:

```

CREATE SPACE DEFINITION SPACE_GSMALL
  DATAPAGES  ( INITIAL         50,
              INCREMENT        50,
              MAXEXTENTS      9999,
              PCTFREE         25    )
  INDEXPAGES ( INITIAL         20,
              INCREMENT        12,
              MAXEXTENTS      9999 )

PARTITION C;

CREATE TABLE REFERENCES(
  REFNO          NUMBER          (5,0)      NOT NULL,
  OTHERID        CHAR            (16)
  USERNAME       CHAR            (16)
  AUTHORS        CHAR            (128)
  YEAR           CHAR            (16)
  TITLE          CHAR            (240)
  SOURCE         CHAR            (240)      )
SPACE SPACE_GCSMALL;

CREATE UNIQUE INDEX REFNUMBER ON REFERENCES ( REFNO );
CREATE UNIQUE INDEX REFUNIQUE ON REFERENCES ( AUTHORS, YEAR );

```

A2.8 Originators Table Description:

```

CREATE SPACE DEFINITION SPACE_GSMALL
  DATAPAGES  ( INITIAL         50,
              INCREMENT        50,
              MAXEXTENTS      9999,
              PCTFREE         25    )
  INDEXPAGES ( INITIAL         20,
              INCREMENT        12,
              MAXEXTENTS      9999 )

PARTITION C;

CREATE TABLE ORIGINATORS (
  ORIGNO          NUMBER          (5,0)      NOT NULL,
  ORIGINATOR      CHAR            (22)       NOT NULL )
SPACE SPACE_GCSMALL;

CREATE UNIQUE INDEX ORIGNOS ON ORIGINATORS ( ORIGNO );

```

```
CREATE UNIQUE INDEX ORIGINS ON ORIGINATORS ( ORIGNATOR );
```

A2.9 Regions Table Description:

```
CREATE SPACE DEFINITION SPACE_GSMALL
```

```

    DATAPAGES    (  INITIAL      50,
                   INCREMENT     50,
                   MAXEXTENTS    9999,
                   PCTFREE       25    )
    INDEXPAGES   (  INITIAL      20,
                   INCREMENT     12,
                   MAXEXTENTS    9999    )

    PARTITION C;
```

```
CREATE TABLE REGIONS (
```

```

    REGIONO      NUMBER      (5,0)      NOT NULL,
    REGION       CHAR        (64)       NOT NULL )
```

```
SPACE SPACE_GCSMALL;
```

```
CREATE UNIQUE INDEX REGIONO  ON REGIONS ( REGIONO );
```

```
CREATE UNIQUE INDEX REGIONAME ON REGIONS ( REGION );
```

A2.10 HMAPS Table Description:

```
CREATE SPACE DEFINITION HMAPS
```

```

    DATAPAGES    (  INITIAL      50
                   INCREMENT     10
                   MAXEXTENTS    9999,
                   PCTFREE       10    )
    INDEXPAGES   (  INITIAL      20
                   INCREMENT     10
                   MAXEXTENTS    9999    )

    PARTITION C;
```

```
CREATE TABLE HMAPS (
```

```

    HMAPNO      NUMBER      (4,0)
    HMAPID      CHAR        (4)
    QMAPNO      NUMBER      (2,0)
    N_LAT       NUMBER      (3,1)
    W_LONG      NUMBER      (4,1)
    MEAST       NUMBER      (6)
    MNORTH      NUMBER      (7)
```

```
SPACE SP_LOCAL
```

```
CREATE UNIQUE INDEX HMAPNO  ON HMAPS ( HMAPNO );
```

```
CREATE INDEX HMAPNAME ON HMAPS ( HMAPNAME );
```

```
CREATE INDEX NLAT ON HMAPS ( N_LAT );
```

```
CREATE INDEX WLONG ON HMAPS ( W_LONG );
```

A2.11 Sampletypes Table Description:

```
CREATE SPACE DEFINITION SPACE_GSMALL
```

```

    DATAPAGES    (  INITIAL      50,
                   INCREMENT     50,
                   MAXEXTENTS    9999,
                   PCTFREE       25    )
    INDEXPAGES   (  INITIAL      20,
```

```

                INCREMENT      12,
                MAXEXTENTS    9999 )
PARTITION C;

CREATE TABLE SAMPLETYPES (
    SAMPLETYPENO      NUMBER      (5,0)      NOT NULL,
    SAMPLETYPE        CHAR        (64)      NOT NULL )
SPACE SPACE_GCSMALL;

```

A2.12 Sources Table Description:

```

CREATE SPACE DEFINITION SPACE_GSMALL
    DATAPAGES    ( INITIAL      50,
                  INCREMENT     50,
                  MAXEXTENTS    9999,
                  PCTFREE       25 )
    INDEXPAGES   ( INITIAL      20,
                  INCREMENT     12,
                  MAXEXTENTS    9999 )
PARTITION C;

CREATE TABLE SOURCES (
    SOURCENO      NUMBER      (5,0)      NOT NULL,
    SOURCE        CHAR        (64)      NOT NULL )
SPACE SPACE_GCSMALL;

CREATE UNIQUE INDEX SOURCENOS ON SOURCES ( SOURCENO );
CREATE UNIQUE INDEX SOURCES ON SOURCE ( SOURCE );

```

A2.13 Methods Table Description:

```

CREATE SPACE DEFINITION SPACE_GSMALL
    DATAPAGES    ( INITIAL      50,
                  INCREMENT     50,
                  MAXEXTENTS    9999,
                  PCTFREE       25 )
    INDEXPAGES   ( INITIAL      20,
                  INCREMENT     12,
                  MAXEXTENTS    9999 )
PARTITION C;

CREATE TABLE SOURCES (
    SOURCENO      NUMBER      (5,0)      NOT NULL,
    SOURCE        CHAR        (64)      NOT NULL )
SPACE SPACE_GCSMALL;

CREATE UNIQUE INDEX METHODNO ON METHODS ( METHODNO );
CREATE UNIQUE INDEX METHOD ON METHODS ( METHOD );

```

A2.14 Storeboxes Table Description:

```

CREATE SPACE DEFINITION SPACE_GSMALL
    DATAPAGES    ( INITIAL      50,
                  INCREMENT     50,
                  MAXEXTENTS    9999,
                  PCTREE        25 )
    INDEXPAGES   ( INITIAL      20,

```

```

                INCREMENT    12,
                MAXEXTENTS   9999 )
PARTITION C;

CREATE TABLE SOURCES (
    SOURCENO          NUMBER          (5,0)          NOT NULL,
    SOURCE            CHAR            (64)           NOT NULL )
SPACE SPACE_GCSMALL;

CREATE UNIQUE INDEX STOREBOXNOS ON STOREBOXES ( BOXNO );

```

A2.15 Maxnos Table Description:

```

CREATE SPACE DEFINITION SPACE_GSMALL
    DATAPAGES    ( INITIAL      50,
                  INCREMENT     50,
                  MAXEXTENTS    9999,
                  PCTFREE       25 )
    INDEXPAGES   ( INITIAL      20,
                  INCREMENT     12,
                  MAXEXTENTS    9999 )
PARTITION C;

CREATE TABLE SOURCES (
    SOURCENO          NUMBER          (5,0)          NOT NULL,
    SOURCE            CHAR            (64)           NOT NULL )
SPACE SPACE_GCSMALL;

```