

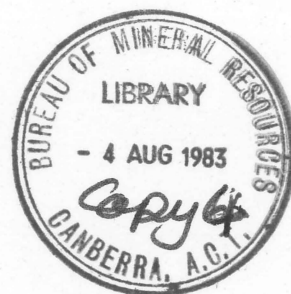
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GUIDE TO INPUT PROCEDURE, WLDAT SOURCE ROCK DATABASE

by

E. Anne Felton

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INTRODUCTION

WLDAT is a code for BMR's computerised data storage and retrieval system for petroleum source rock data, which was commenced in 1977 (De Nardi & Jackson, 1980; De Nardi, 1981). This procedure guide is aimed at minimising inconsistencies and errors in the data base.

Inconsistencies can arise when data from a basin or well are received and recorded at different times and occur mainly in the recording of basic data - well name, location. Errors can occur, both when data are being written on to computer coding sheets (recording), or added to the computer file (entry). A set of standards for recording, and a series of checks before recording and after entry have evolved after several years experience. Both the standards and the checking procedures are included as appendices in this guide.

HOW TO USE THIS GUIDE

The guide consists of a listing of each data item with a description of its function and comments on how it is recorded on the coding sheet. Any standards used in recording, or checks carried out, are mentioned for each data item. The notes on each data item should be read as each item is recorded, and frequent reference made to the example sheets included.

Two quick references: a flow chart indicating the progress of data from report to computer printout, and a check list of procedures for the data recorder are included.

DATA RECORDING

Data consist of two kinds: basic data (items 2-6, and 46-50) which provide information about the well and the report, and organic geochemistry data, which are mainly numerical. When recording data, the basic data will remain the same for any given well in a particular report. To avoid repetition, these item rows can be shaded and marked 'SAP' (same as previously). The organic geochemistry data for each sample point (depth) in the well continue to be added to successive coding sheets, working down the well (see examples).

Abbreviations generally follow those used in 'BMR Preferred Abbreviations'. A few abbreviations for proper names commonly recorded in WLDAT are listed in Appendix 1.

DATA ITEMS

1. Reference number REFNO (R8)

This refers to the number of the WLDAT input data sheet (coding sheet). The number is a right-justified eight-figure number, indicated by R8 above, meaning that reference numbers from 00000001 to 99999999 can be accommodated.

The input data sheets are stored at BMR. They are used for checking data after punching into the WLDAT system by ADP.

This reference number appears only in report file WELINF.

2. Well name (WELNM)(L20)

The well name and number separated by a hyphen (e.g. TERN-2) are recorded. The name of the operator who drilled the well is not included in the name except where the operator is a government body. The initial letters of the body then precede the well name and number (e.g. BMR RODINGA-1A, GSQ HUGHENDEN-15).

The abbreviations for government bodies are listed in Appendix 1.

3,4. Latitude (GRDNS) and longitude (GRDEW) (L12)

This location information is often omitted from, or recorded inaccurately in, company reports. The latitude and longitude in BMR's PEDIN well data storage and retrieval system are used as a standard.

Where a well is not recorded in the PEDIN system, as with most BMR wells, the well completion report may be consulted. The location information for most wells may also be obtained from BMR's Core and Cuttings Laboratory.

If a well already appears in WLDAT, the latitude and longitude of the new entry should be checked against the previously entered location.

It is necessary to enter zero values in some columns where the number is low - see example.

Example	COLUMN NO	1	2	3	4	5	6	7	8	9	10	11	12
	GRDNS	Ø	1	3		1	6	'	4	6	"	S	
	GRDEW	1	2	8		Ø	7	'	Ø	Ø	"	E	

Columns 7 and 10 are reserved for the minute (') and second (") symbols respectively. As this is a database for Australia, Column 11, row 3 always contains the letter S (for south latitude); column 11 row 4 always contains the letter E (for east longitude). Column 4 is always left blank.

5. Sedimentary basin (SDBSN) (L20)

The names of Australia's sedimentary basins are listed in Appendix 2. Only those basin names listed should be included in WLDAT.

Where a well passes through several sedimentary basins, the well data are separated into the appropriate basin according to depth. For example, Etonvale-1 passes successively through Eromanga, Galilee and Adavale basin sediments, the Eromanga/Galilee boundary being at 1670 m and the Galilee/Adavale boundary at 1908 m.

6. Location of report (LCRPT) (L20)

Unpublished source rock reports are housed in BMR; the room number is given. This information does not appear in the printout.

Published data, for example, in journals, are housed in the BMR library (Rm 200).

7. Sample type (SAMTY) (L4)

There are several kinds of subsurface samples: Core (CORE); cuttings (CUTT), sidewall core (SWC); ditch cuttings (DC) and junk samples (JS).

Surface samples, as from an outcrop, have the symbol OTCP.

8. Sample depth (SAMDP) (R14)

This is recorded in metres, to one decimal place.

The depth interval for a composite picked cuttings sample can be given, the two depths being separated by a dash in column 8.

An outcrop sample (OTCP) will always have a depth of 0 metres.

9. Age (L4) and formation (L16) (FMAGE)

The age abbreviations used are listed in Table 1. Note that a three letter abbreviation is always followed by a full stop. A four letter abbreviation does not have a full stop.

The qualifying terms lower, middle and upper are used where known. They are recorded as a single letter followed by a full stop.

Where an age range is recorded, the oldest age appears first,

e.g.

PAL. EOC.

CAM. M.U.

But CRET L.M.

Slashes (e.g. PAL./EOC.) should not be used.

Items 10-45 are the actual results of analytical determinations carried out on well samples.

10. Total organic carbon (TOC) (R4)

The value is recorded to two decimal places. If the value exceeds 9.99, 1 decimal place is used.

11. Vitrinite reflectance (VTREF) (R4)

This value is recorded to two decimal places. The mean reflectance is used where a range is quoted in a report.

12. Thermal alteration index (TAI) (R4)

This is recorded to one decimal place. The value is prefixed by F or T according to whether the measured value is on a scale of 0-5 or 0-10 respectively. Where reported as TAI2-, the minus sign is included. This item includes spore colouration index (SCI).

13-17. Extractable organic matter (EOM) (R6); Saturated hydrocarbons (SATD) (R6); aromatic hydrocarbons (AROM) (R6); polar (N, S, O - containing organic compounds) (POLAR) (R6); asphaltenes (ASPH) (R6)

These values are recorded in parts per million.

18. Total extract as a percentage of organic carbon (EPOC) (R6)

This is expressed to two decimal places.

19. Total hydrocarbons as a percentage of extract (HPE) (R4)

This is expressed to one decimal place.

21,22,41. Availability of gas chromatographic analysis of hydrocarbon fraction (usually saturates) (CHROM) (L4); availability of light gas analysis (LTGAS) (L4); availability of Curie point (fixed temperature) pyrolysis

These analyses cannot be accommodated in WLDAT. Where they are reported, their availability is indicated by YES. (It is not necessary to record NO.)

23-27,35. Isotope data, (EOMISO, SATISO, AROISO, POLISO, ASPISO (R6), KRGISO (R4)

These data are recorded in per mil ($^{\circ}/_{\infty}$) for the extract and for its fractions (always a negative number).

36-40. Pyrolysis data

Only data from the Rock Eval analytical method can be accommodated.

42-45. Organic maceral data

Only quantitative (i.e. numerical) data can be accommodated. The data are expressed as percentages.

46. Confidentiality (L4)

Open file data are denoted by OPEN; confidential material by YES. Confidentiality is regularly reviewed.

47. Analyst (L19)

The person or laboratory carrying out the analyses. A list of abbreviations for a number of laboratories is in Appendix 3.

48. Customer (L6)

The person(s) or organisation requesting the analyses (see Appendix 3 for some abbreviations). This information does not appear in the printout.

49. Report identification (RPTID) (R6)

A report number must be included. Most data are obtained from either the R, SS 289 A-X, or SS series of reports.

R series (e.g. R324) numbers are allocated by BMR's Core and Cuttings Laboratory to reports received from companies and individuals who have analysed material held by the laboratory.

SS 289 A-X series contains reports on BMR sampled material held by the Core and Cuttings Laboratory.

SS series (e.g. SS732) numbers refer to reports, mainly confidential, which have been received by BMR under the terms of the Petroleum (Submerged Lands) Act, 1967.

In the case of data from a BMR file, the file number is recorded. Source rock data may also be acquired by BMR from the following:

Consulting geochemists
Publications

50. State

The state or territory in which the well is located is indicated by an abbreviated title.

REFERENCES

- DeNardi, R.W. & Jackson, K.S., 1980. Petroleum source rock computer reference systems: operating instructions. Bureau of Mineral Resources, Australia, Record 1980/4 (unpublished).
- DeNardi, R., 1981. A user guide to the source rock data-base (WLDAT) (program IMFN) on the Hewlett-Packard database IMAGE system. Bureau of Mineral Resources, Australia, Record 1981/58 (unpublished).

FLOW CHART FOR DATA

Report containing source rock data received at BMR and passed to geoscientist supervising WLDAT.

- . Geoscientist examines report and annotates data where necessary. Report passed to Technical Staff Member (TSM).
- . TSM enters data on to coding sheets.
- . TSM prepares reference card for card file of reports.
- . Coding sheets taken to ADP for punching; returned to TSM.
- . TSM obtains printout from ADP of newly entered data and checks it against coding sheets.
- . TSM runs OUTFMT request for this newly entered data and gives to supervising geoscientist for checking.
- . Corrected ADP printout plus corrected coding sheets are returned to ADP; returned to TSM when corrections complete.
- . Corrected coding sheets stored in numerical order with corrected ADP printout.
- . Corrected OUTFMT request handed to supervising geoscientist.
- . Report filed.

CHECK LIST FOR DATA RECORDER :

Does WLDAT already contain data from this well?

If YES check data in WLDAT listing against the following items before filling in coding sheets:

1. Spelling and spacing of well name, particularly wells drilled by Government bodies;
2. Consistent basin names within the well;
3. Consistent ages and formation names within the well;
4. Consistent and accurate latitudes and longitudes.

If NO or after 1-4 above,

1. Check latitudes and longitudes against PEDIN system;
2. For data items 1-9 and 46-50, enter data on coding sheets, using abbreviations in this Record where required, (N.B. all these items must be filled in);
3. Enter data items 10-45 where possible, using these notes as a guide;
4. Check all entries before taking to ADP section. All items must be correctly entered with respect to spacing ('right' or 'left-justified') for consistency in the printout. Data cannot be retrieved from WLDAT if names and spacing are not consistent.

APPENDIX 1 - ABBREVIATIONS

1. Government bodies

Geological Survey of Queensland	- GSQ
Geological Survey of New South Wales	- GSNSW
Geological Survey of Victoria	- GSV
Geological Survey of South Australia	- GSSA
Geological Survey of Western Australia	- GSWA
Geological Survey of Northern Territory	- GSNT
Geological Survey of Tasmania	- GST
Bureau of Mineral Resources, Geology & Geophysics	- BMR
Commonwealth Scientific and Industrial Research Organization	- CSIRO
Australian Mineral Development Laboratories	- AMDEL

2. Analytical laboratories

Esso Australia Ltd	- ESSO
Robertson Research International	- ROB.RES
Western Australia Institute of Technology	- WAIT
Wollongong University	- WOLL.UNI.
Houston Oil and Minerals	- HOUST.OIL

APPENDIX 2 - AUSTRALIAN SEDIMENTARY BASINS

Adavale	Nambour
Amadeus	Ngalia
Anckaringa	Officer
Arrowie	Ord
Bangemall	Otway
Bass	* Papuan
Bonaparte	Pedirka
Bowen	Perth
Browse	Polda
Canning	St Vincent Gulf
Carnarvon	Sorell
Carpentaria	Styx
Clarence-Moreton	Surat
Coonamble	Sydney
Cooper	Tamworth Trough
Coral Sea	Torquay
Daly River	Warburton
Darling	
Drummond	
Eromanga	
Eucla	
Galilee	* In Papua New Guinea
Georgina	
Gippsland	
Great Australian Bight	
Halifax	
Hillsborough	
Hodgkinson	
Ipswich	
Laura	
Maryborough	
McArthur	
* Morehead	
Murray	

EXAMPLE SHEET 1 OF 2

WLDAT

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REFNO	0	0	0	4	2	7	6	REFNO	0	0	0	4	2	7	7																										
WELNM	B	M	R	WELNM	/	/	/	/	/																																
GRDNS	0	1	9	GRDNS	/	/	/	/	/																																
GRDEW	1	1	6	GRDEW	S	A	P																																		
SDBSN	C	A	R	N	A	R	V	O	N	SDBSN	/	/	/	/	/																										
LCRPT	R	M	/	2	1	LCRPT	/	/	/	/	/																														
SAMTY	C	U	T	T	SAMTY	C	O	R	E																																
SAMDP	2	7	6	1	.	6	-	2	7	7	0	.	6	SAMDP	2	7	8	0	.	1																					
FMAGE	T	R	1	.	M	O	N	G	A	R	O	O	8	E	D	S	FMAGE	P	E	R	M	U																			
TOC %	0	.	2	1	TOC %	0	.	4	5																																
VTREF	0	.	6	2	VTREF																																				
TAI																																									
EOM																																									
SATD																																									
AROM																																									
POLAR																																									
ASPH																																									
EPOC																																									
HPOC																																									
HPE																																									
CHROM																																									
LTGAS																																									
EOMISO																																									
SATISO																																									
AROISO																																									
POLISO																																									
ASPISO																																									
KRGC																																									
KRGH																																									
KRGS																																									
KRGN																																									
KRGO																																									
KRGHC																																									
KRGOC																																									
KRGISO																																									
PYFR 1																																									
PYFR 2																																									
PYFR 3																																									
PYFR 4																																									
PYFT																																									
CPPYR																																									
VIT			2																																						
EXIN			1	1																																					
INER			3	3																																					
FUS			3	4																																					
CNFID	O	P	E	N	CNFID	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/																					
ANLYS	C	S	/	R	O	ANLYS	/	/	/	/	/	/	/	/	/	/	/	/	/	/																					
CSTMR	B	M	R	CSTMR	S	A	P																																		
RPTID	S	S	2	7	6	RPTID	/	/	/	/	/	/	/	/	/	/	/	/	/	/																					
STATE	W	A	STATE	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/																					

EXAMPLE SHEET 2 OF 2

WLDAT

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REFNO	0	0	0	0	4	2	7	8													REFNO	0	0	0	0	4	2	7	9												
WELNM																					WELNM																				
GRDNS																					GRDNS																				
GRDEW																					GRDEW																				
SDBSN																					SDBSN																				
LCRPT																					LCRPT																				
SAMTY																					SAMTY																				
SAMDP																					SAMDP																				
FMAGE																					FMAGE																				
TOC %																					TOC %																				
VTREF																					VTREF																				
TAI																					TAI																				
EOM																					EOM																				
SATD																					SATD																				
AROM																					AROM																				
POLAR																					POLAR																				
ASPH																					ASPH																				
EPOC																					EPOC																				
HPOC																					HPOC																				
HPE																					HPE																				
CHROM																					CHROM																				
LTGAS																					LTGAS																				
EOMISO																					EOMISO																				
SATISO																					SATISO																				
AROISO																					AROISO																				
POLISO																					POLISO																				
ASPISO																					ASPISO																				
KRGC																					KRGC																				
KRGH																					KRGH																				
KRGS																					KRGS																				
KRGN																					KRGN																				
KRGO																					KRGO																				
KRGHC																					KRGHC																				
KRGOC																					KRGOC																				
KRGISO																					KRGISO																				
PYFR 1																					PYFR 1																				
PYFR 2																					PYFR 2																				
PYFR 3																					PYFR 3																				
PYFR 4																					PYFR 4																				
PYFT																					PYFT																				
CPPYR																					CPPYR																				
VIT																					VIT																				
EXIN																					EXIN																				
INER																					INER																				
FUS																					FUS																				
CNFID																					CNFID																				
ANLYS																					ANLYS																				
CSTM																					CSTM																				
RPTID																					RPTID																				
STATE																					STATE																				