Reporting Guidelines

Guidelines for the production and submission of reports on mineral tenements

August 2025

Mineral Resources Tasmania
Department of State Growth

Tasmanian Government

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If there are inconsistencies between the requirements of this guideline and the requirements of the *Mineral Resources Development Act 1995*, the Act prevails to the extent of that inconsistency.

Revision history

March 2014	Section 3.3.4 (Geophysics) – addition to ASEG technical standards
April 2014	Section 3.3.6 – change to information requirements
November 2017	Update and revision of entire document
January 2018	Section 3.3.1 (Partial Surrender Report) – change to information requirements Section 4.6 Ore Reserves and Resources – addition of Australian guidelines for the estimation and classification of coal resources 2014 edition.
January 2019	Section 6. Resources. Update references to Australian Requirements for the submission of digital exploration data version 4.5 February 2018.
March 2020	Section 2.1 Digital and hard copy – Change to requirements. Section 2.2 Report Submission – Addition of new section on report submission.
July 2025	Section 2.4 Acceptable storage media - removal of outdated media Secion 2.5 Media labelling - removal of outdated media Section 4.1 Drilling - clarity added around use of templates Section 4.3 Geochemisty - clarity added around QA/QC reporting and detection limits and templates Section 4.4 Geological Mapping - clarity added relating to geographic positioning. Section 4.5 Geophysics - new requirements for reporting passive seismic surveys Update and revision of text formatting in entire document, to improve clarity and consistency Standardisation of reporting datum.

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1.0 STATUTORY REQUIREMENTS

1.1 Purpose of the guidelines

The purpose of the Reporting Guidelines is to assist the holders of licences and leases in Tasmania with the preparation and submission of reports on exploration and or mining activity in accordance with reporting requirements detailed in the *Mineral Resources Development Act 1995* (the Act). For a summary of all reporting requirements, including relevant legislative references, refer to Appendix 2.

The requirements for the submission of reports are in place so that exploration and mining activities can be effectively monitored, assessed, and all data obtained can be captured. This information will assist future explorers in the search for new mineral deposits in Tasmania.

In preparing reports close liaison is encouraged between the licensee's and lessee's technical staff and the staff of Mineral Resources Tasmania (MRT) who are responsible for assessing the reports and monitoring exploration and mining progress.

1.2 Tenement reporting

It is the responsibility of the tenement holder to ensure that full details of all work carried out as part of exploration programs on both leases and licences, including details of relevant expenditure, are submitted irrespective of whether the exploration is undertaken by the tenement holder, by consultants, or by joint venture partners.

1.2.1 Research reports

If research is sponsored or funded by the licensee/lessee and/or joint-venture partner and is attributed to exploration activity and expenditure, a complete record must be presented to MRT either under the same cover as the Annual or Final Report, or be provided directly by the author. Research may be in the form of a university thesis or confidential report from a research organisation. Research reports will be subject to the same confidentiality restrictions as the covering report in which it is included, unless agreed otherwise with the licensee/lessee.

1.3 Reporting requirements for exploration, special exploration and retention licences

Holders of Exploration, Special Exploration and Retention licences are required to submit Annual Returns and Annual Reports and in some cases Quarterly Returns, during the life of a licence, and a Final Report upon expiry, surrender or cancellation of a licence or any part thereof. For a summary of annual, final and partial surrender reporting requirements for Exploration, Special Exploration and Retention licences refer to Appendix 2.

1.3.1 Quarterly returns

Quarterly Returns are only required to be submitted when the Director of Mines requests them from the licence holder.

Quarterly Returns contain an itemised breakdown of exploration expenditure, a brief progress report on exploration and details of any activities in progress and completed, and include information on activities causing environmental impact and a description of rehabilitation undertaken.

1.3.2 Annual returns

Annual Returns must be made on the approved form and be lodged by the anniversary date of the granting of a licence. The Annual Return is used to ensure the licensee's compliance with the Act and the licence conditions. Information provided on proposed work programs and expenditure is used as the basis for an agreement on future work and expenditure commitments.

The Annual Return form must be completed with categorised expenditure and summaries of exploration completed, activities causing environmental impact, rehabilitation undertaken, and proposed work and expenditure for the following year.

1.3.3 Annual reports

Annual Reports containing full technical details of work undertaken are required each year for the term of the licence. The required content and format of Annual Reports are defined in Section 3.2 - Annual report and Section 4 - Required information. Annual Reports must be submitted to the Director of Mines by the anniversary of the granting of a licence.

1.3.4 Final reports and partial surrender reports

Final Reports are required within 3 months of the expiry, revocation, refusal of extension of term or surrender of all or part of a licence. Final Reports and Partial Surrender Reports contain a complete summary of exploration carried out on the area of a licence that is no longer in force, and include details of work on any area not previously reported. Final Reports and Partial Surrender Reports follow the content and format of Annual Reports, and will contain the additional information detailed in Section 3.3 - Final Report and Section 3.3.1 Partial Surrender Report.

1.4 Reporting requirements for mining leases

Mining lease holders are required to submit Quarterly Returns and, at the request of the Director of Mines, an Annual Report and a Final Report when the lease, or any part thereof, ceases to be in force. For a summary of annual and final reporting requirements for Mining Leases refer to Appendix 2.

1.4.1 Mining lease records and plans

It is a statutory requirement that lessees keep up-to-date records of any exploration and mining activities conducted on a mining lease. Under Section 188(2) of the Act, the following records are required to be kept by lessees:

- The quantities and values of products sold or held in stock.
- The quantities of ore and waste mined and ore treated.
- The sources of ore and waste mined and details of waste disposed of.
- Details of any mine development undertaken.
- Details of any process development.
- A breakdown of any capital expenditure.
- The operating costs of any mining and exploration carried out.
- Details of the workforce.
- Details of on-lease exploration as the Director requires.
- Details of ore reserves and resources, by individual ore deposit, in accordance with standards published by the Australasian Joint Ore Reserves Committee or another body that the Minister has nominated by notice in writing to the lessee.

Lessees are required to prepare and keep accurate plans of any mine established or used. Under Section 188A of the Act the following mine records are to be made and kept by the lessee:

- Accurate surface plans of any additional workings, or extensions.
- Accurate underground plans of any additional workings, or extensions.

These plans are to be drawn up in accordance with a survey carried out by a qualified surveyor.

1.4.2 Submission of mine records and plans

On request by the Director of Mines, the lessee must submit a copy of records, plans and information detailed above, as specified under Sections 188 and 188A of the Act.

1.4.3 Quarterly returns

Lessees are required to submit quarterly production and royalty returns (quarterly returns) for the quarters ending 31 March, 30 June, 30 September and 31 December. Quarterly Returns must be made on the approved form, and be lodged within 28 days after the end of the quarter.

Quarterly production and royalty returns detail the nature, quantity and value of minerals obtained during the quarter, the royalty payable, and any other information relating to the lease as required by the Director of Mines, for example, an itemised breakdown of exploration expenditure.

1.4.4 Annual report and final report

The Director of Mines may serve notice on a Lessee, requiring an Annual Report to be submitted within 30 days of the anniversary date of the granting of the lease, or on a date as specified by the Director. The required format for Annual Reports on leases should follow the content and format required for Annual Reports on licences, and includes additional content detailed in Section 3.4 - Mining Lease Annual Report.

A Final Report is required when requested by the Director of Mines within 3 months of all or part of a lease ceasing to be in force. Final Reports must contain a complete summary of exploration and mining activities carried out on the area of the relevant lease, and include details of work on any area not previously reported.

The required content and format of Final Reports on leases should follow the content and format required for Final Reports on licences, and must include additional content detailed in Section 3.4 - Mining lease annual reports. In the preparation of a Final Report for a mine lease, close liaison is recommended between technical staff and the staff of MRT who are responsible for assessing the reports.

For a summary of annual and final reporting requirements for Mining Leases refer to Appendix 2.

1.5 Submission dates

Exploration, special exploration and retention licences:

- Annual Report - must be submitted by the anniversary of the granting of a licence.
- Final and Partial Surrender Reports – must be submitted within 3 months of the end of a licence.
- Annual Return - must be submitted by the anniversary of the granting of a licence.
- Quarterly return (when required) – for the quarters ending 31 March, 30 June, 30 September and 31 December. Quarterly Returns must be submitted within 28 days of the end of the quarter.

Mining leases:

- Quarterly Returns - for the quarters ending 31 March, 30 June, 30 September and 31 December. Quarterly Returns must be submitted within 28 days of the end of the quarter.
- Annual Report (when required) - must be submitted within 30 days of the anniversary of the granting of the lease or as specified by the Director of Mines.
- Final Report (when required) – must be submitted within 3 months of the end of the lease.

1.6 Report compliance

Reports are monitored for compliance by MRT technical staff. Any report that does not comply with these guidelines must be corrected upon notification by MRT. Reporting requirements will not have been met until corrections, and any missing data, have been received and accepted by MRT.

Reports must not contain false or misleading information, this includes the omission of information (Section 202 of the Act).

Licensees and lessees may suffer penalties for failure to comply with reporting requirements, ranging from forfeiture of part or all of the security deposit to revocation of the tenement. Non-compliance with licence or lease conditions, may prejudice future applications for licences and leases in Tasmania.

1.7 Confidentiality

Reports and data relating to all Exploration, Retention and Special Exploration licences remain confidential until:

1. a period of five years has elapsed from the date on which a report was due to be submitted to the Director of Mines;
2. a period of five years from the date of acquisition of the data; or
3. a licence expires, is surrendered, or is revoked, whichever occurs first.

Reports and data relating to retention licences remains confidential for the period during which the licence is in force, up to a maximum of 5 years.

Reports on mining leases remain confidential as long as the lease is in force.

1.8 Copyright

On the submission to MRT of reports (including third party reports) a non-exclusive licence, copyright included, is given to MRT to publish, print, adapt and reproduce the work in any form, subject to confidentiality conditions.

1.9 Drill core and cuttings submission

All drill core and cuttings must be offered to MRT's Mornington core library, at the licensee's or lessee's cost, in accordance with MRT's drill core lodgement policy specified in the Core Library procedural documents. These are available from the Mineral Resources Tasmania website.

1.10 Thin sections, geological and palaeontological specimens

The submission of specimens and/or thin sections is optional. Samples no longer required by the company should be offered to Mineral Resources Tasmania, provided the location of the specimens are known. For further information contact the Chief Government Geologist.

2.0 GENERAL REQUIREMENTS

2.1 Digital reports

Reports are required in digital format only.

Files must be virus free and not have a password or other form of security protection. All report text and figures must be in English. Details of the types of information, data required and accepted formats are specified in Section 4 - Required Information, and Section 5 - Digital Data and Formats.

Reports and all supporting data must be submitted in digital format (see Section 5.1 - Digital reports). Digital reports must follow the structure and sequence outlined in Section 3.2, 3.3 and 3.4 as relevant to the type of report. Core photographs, images and tabular data such as assay results and drilling data are to be supplied in digital format only (see Section 5 - Digital Data and Formats).

2.2 Report submission

Digital reports and associated data must be submitted to the Director of Mines (see Section 2.3 - Delivery Address for details), either by email, by mail, or in person. Requirements on acceptable storage media and media labelling are detailed in Sections 2.4 and 2.5.

2.2.1 Report submission by email

The submission of reports and associated data by email must not exceed a combined file size of 20 MB. Data files associated with the report, that are file compressed, must be attached to the email separately from the PDF report. It is preferable that files be compressed using Microsoft Windows compatible software, e.g. WinZip.

2.2.2 Digital data transfer

information, data required and accepted formats are specified in Section 4 - Required Information, and Section 5 - Digital Data and Formats.

Reports and all supporting data must be submitted in digital format (see Section 5.1 - Digital reports). Digital reports must follow the structure and sequence outlined in Section 3.2, 3.3 and 3.4 as relevant to the type of report. Core photographs, images and tabular data such as assay results and drilling data are to be supplied in digital format only (see Section 5 - Digital Data and Formats).

2.3 Delivery address

Reports are required in digital format only and must be addressed to the Director of Mines.

Email submission: info@mrt.tas.gov.au

Mail Rosny office:

Mailing address:	**In person to:**
Mineral Resources	Mineral Resources
Tasmania	Tasmania
PO Box 56	30 Gordons Hill Road
ROSNY PARK	ROSNY PARK
TASMANIA 7018	TASMANIA 7018

Mail Burnie office:

Mailing address:	**In person to:**
Mineral Resources	Mineral Resources
Tasmania	Tasmania
PO Box 672	Level 2/49 Cattley Street
BURNIE	BURNIE
TASMANIA 7320	TASMANIA 7320

2.4 Acceptable storage media

- Portable hard drives, non-returnable
- USB flash drives, non-returnable
- Tape cartridges for large volume data sets, specifically seismic field data

2.5 Media labelling

The media submitted to MRT must be labelled with the following information:

- Tenement number
- Company name
- Type of report
- Period covered

3.0 STRUCTURE OF REPORTS

To ensure that information in reports is submitted in an easily accessible and usable form, data must be presented in a standardised structure. Details of the required structure of reports are specified in this section. Instructions for the content and format of digital reports and the submission of digital data are specified in Section 5.1 - Digital reports.

Data must be submitted once only (with the exception of summary tables and figures), and must not be reproduced in subsequent reports.

Reports are to be arranged by work site or prospect, with work programs and results described for each area. As an example topics considered for each prospect often include activities such as gridding, geology, geophysics, geochemistry, drilling, remote sensing, ore reserves and resources, 3D modelling, other work, discussion and future work. For details on describing exploration and mining activities refer to Section 4 - Required Information.

3.1 Tabular data

Most of the actual data should be included as appendices, rather than in the main body of the report. For details on the content and format of refer to section 5.3 - Metadata and Section 5.6 - Templates for digital data.

3.2 Exploration licence annual report

The first annual report, in addition to the structure mentioned below, must include a statement of the exploration philosophy and objectives (in particular, the type of mineral deposits sought and the reasons for considering the licence area prospective for these deposits).

- **Title page:**
  - ◊ Report title, licence or lease number, type of report (i.e. annual), period covered, name and address of licensee or lessee (and/or operator/manager), author(s) of the report, publication date (DD/MM/YYYY), datum used in the report (currently the required datum is MGA GDA94).

- **Abstract / Executive summary:**
  - ◊ Objective, methodology, results, recommendations.
- **Contents:**
  - ◊ Including lists of figures and plates, tables, plans, media and appendices.
- **Summary activity map:**
  - ◊ An activity summary map of the licence or lease area showing the particular area(s) covered by the report with the location and type of surveys conducted. The map should also show topographic features and use MGA (GDA94).
- **Introduction:**
  - ◊ Exploration rationale (objective);
  - ◊ Lease or licence number, name and location, reporting period, tenement holder; Ownership of the licence/lease, including joint venture details and title transfers.
- **Review of previous work:**
  - ◊ Prior to the current licence or lease (if the first annual report);
  - ◊ During the life of the licence or lease.
- **Exploration completed during the reporting period:**
  - ◊ Regional exploration activities;
  - ◊ Prospect-based exploration activities.
- **Discussion of results**
- **Conclusions:**
  - ◊ Including recommendations.
- **Future exploration**
- **Proposed work program for the following year**
- **Environmental management:**
  - ◊ Including surface-disturbing operations, archaeological surveys, botanical and fauna surveys and rehabilitation, capping of drill holes, etc.
- **Expenditure:**
  - ◊ Presented as a table and subdivided by activity type.
- **References**
- **Appendices:**
  - ◊ Appendices may contain a variety of information, including consultants' and/or contractors' reports, maps, plans, cross sections, core photographs, images and tabular data such as assay results and drilling data (see Section 5.1 - Digital reports).

3.3 Final report

Final reports are to follow the content and format of annual reports as specified above and are required to contain the following information.

1. A résumé of the exploration philosophy.
2. A map showing the surrendered and (where appropriate) retained areas of the licence or lease.
3. A summary of all exploration undertaken on the surrendered area during the life of the licence or lease. Detailed information, such as results of geochemical and geophysical surveys, drill logs, etc., which have been included in previously submitted annual reports, need only be referred to in the final report but must be provided in partial surrender reports unless the licensee opts for the relevant reports to be made open file, as detailed below.
4. Full details of work undertaken during the final reporting period, and any data not previously reported.
5. Conclusions as to the nature and distribution of any mineralisation in the area being surrendered.
6. A complete bibliography of all reports on the surrendered area.
7. Details of environmental management activities undertaken (refer to Section 4.2 - Environmental management).
8. Complete digital datasets generated during the life of the licence or lease must be submitted.

3.3.1 Partial surrender report

Partial surrender reports are to follow the content and format of final reports as specified in Section 3.3 - Final Report, (as above), with the addition of the following information.

A summary map of the licence or lease area showing the area(s) to be surrendered and the area(s) to be retained.

As an alternative to providing full details of all exploration within surrendered areas (as required in items 3 and 8 above), the licensee may opt for previously submitted annual reports to be made open file. This would also apply to reports on specific contracted surveys and regional surveys.

3.4 Mining lease annual report

The required content and format for annual reports on leases is the same as that required for annual reports on licences (see Section 3.2 - Annual Report), but must also include the following information:

- A statutory declaration of report accuracy.
- A summary of matters specified in Section 188(2) of the Act. Refer to Section 1.4.1 - Mine lease records and plans.
- Where available, and in a format agreed with MRT, digital copies of:
  - ◊ Drilling and associated geoscience databases (including QA/QC assay data).
  - ◊ Wireframes of geological features and mineralisation.
  - ◊ Topographic surface model.
  - ◊ Wireframes of open pit and underground workings, including stopes.
  - ◊ Mine plans, including development and face mapping.
  - ◊ Orebody block models.
  - ◊ Details of any mine grid to allow conversion of data to MGA (GDA94) coordinates.
  - ◊ Appropriate metadata for all of the above.
- Details of mining operations to be undertaken in the next year under the approved mining plan.
- Details of any associated reports and plans on the development and maintenance of waste storage infrastructure, such as tailings storage facilities and waste rock dumps.
- Details and any associated reports on progressive and final rehabilitation activities undertaken.

4.0 REQUIRED INFORMATION

This section specifies the required information to be included when reporting activities undertaken on licences and leases. Instructions for the content and format of digital reports and the submission of digital data are given in Section 5 - Digital Data and Formats.

When exploration programs are in progress at the time of submission of an annual report, it is acceptable to indicate the progress of relevant surveys, and to submit the full results in a subsequent report when the work has been completed.

4.1 Drilling

Description of drilling activities must include a statement on the aim and targets for the drilling program, and a summary of all drilling work undertaken (including drill holes in progress). All collars, orientation surveys, logs and analytical results are to be provided in prescribed templates. Other data, such as geophysical, petrophysical and hyperspectral results, should be submitted in an acceptable format (Appendix 1 - Acceptable formats for digital data).

The following drilling related data must be supplied in the corresponding data templates:

Description	Filename
Drill collar information	SL_1_TEMPLATE
Downhole Direction Survey	DS_1_TEMPLATE
Downhole Geochemistry	DG_1_TEMPLATE
Downhole lithology	DL_1_TEMPLATE
Surface Geochemisty	SG1_1_TEMPLATE

The following information must be included in the description of drill programs:

- A typed cover sheet or appropriate spreadsheet for each drill hole with details of:
  - ◊ Type of drilling (e.g. diamond, percussion, auger) and drill rig and drilling company.
  - ◊ The date on which the hole was collared and on which drilling was completed.
  - ◊ Grid reference and collar elevation for each drill hole (drill hole collars should be accurately surveyed where possible and the method of determining location included, e.g., by GPS).
  - ◊ Orientation of the drill hole (declination and direction at collar, and the results of, and instruments used in, any down-the-hole surveys).
  - ◊ A very brief summary log, including significant assay results.
- A detailed geological log of the core, cuttings, etc. in metric units, and the name of the geologist who logged the core.
- Full results of any down-hole geophysical logging, including raw data (e.g. LAS file for gamma logs).
- Details of any samples taken and full results of testing of the samples (geochemical, petrological, geophysical, metallurgical, etc.).
- Full results of any logging of core, including raw data (e.g. hyperspectral or petrophysical)
- Photos taken of core, as specified in Section 5.5.
- Geotechnical logging if available.
- The physical location of drill core and cuttings at the time the report was written.

4.2 Environmental management

The following information must to be included in the description of environmental management activities:

- A summary of activities undertaken which resulted in vegetation clearing and/or ground disturbance (i.e. earthworks) - including but not limited to:
  - ◊ Grid line cutting.
  - ◊ Drill site preparation and drill pad construction.
  - ◊ Development of new vehicular tracks.
  - ◊ Substantial refurbishment of existing access.
  - ◊ Costeans and test pitting.
- A summary of any remedial works or rehabilitation activities undertaken, with supporting photographic evidence of rehabilitation works completed - including but not limited to:
  - ◊ Backfilling and re-contouring of drilling sumps, test pits, etc.
  - ◊ Ripping of compacted sites, i.e. drill pads and drill access tracks.
  - ◊ Spreading vegetation slash, fertiliser and weed control activities.
  - ◊ Removal of drill cuttings, rubbish, camp hardware, etc.
- A summary of any exploration features that are to be maintained for a period of time, such as:
  - ◊ Costeans or test pits purposefully left open.
  - ◊ Drill pads and new access tracks that are part of ongoing work.
- A summary of any capping and decommissioning of drill holes, including a record of the drill hole abandonment procedure applied (see the Mineral Exploration Code of Practice for a list of requirements).
- Environmental surveys and site monitoring information including:
  - ◊ Cultural heritage surveys and studies.
  - ◊ Geoconservation surveys and studies.
  - ◊ Flora and fauna surveys and studies.
  - ◊ Rock characterisation (e.g. acid generation potential).
  - ◊ Water testing reports and associated data.

4.3 Geochemistry

The report must describe any geochemical investigations undertaken, program rationale, results and their relationship to other components of the exploration program. Geochemical investigations must be described in sufficient detail, and presented in a format, to allow the results to be reproduced or re-interpreted. Geochemical data, with survey details, must be submitted in the appropriate templates (see Section 5.6 - Templates for digital data):

- Surface geochemical sampling: SG1_1_TEMPLATE.
- Downhole geochemical sampling: DG_1_TEMPLATE.
- To facilitate accurate capture of geochemical data copies of original laboratory reports, including QA/QC data and details of analytical methods, including detection limits, must be provided as PDF files.

The following information is to be provided in the description of geochemical investigations:

- Sampling procedures, such as sample depth, sample weight, method of collection, and sample type.
- Description of sample preparation, such as sieving and the size fraction analysed, any concentration of the sample (e.g. heavy mineral separation, magnetic or non-magnetic fraction, panned concentrate).
- Description of analytical procedures, including:
  - ◊ Name of analytical laboratory.
  - ◊ Analytical method and code, limits of detection, over-range methods.
  - ◊ Method of extraction / digestion, where applicable.
  - ◊ Values for repeat samples and standards.
- Methods used for processing and interpretation of data are to be described, particularly if advanced data processing methods have been used.
- Below detection limit (BDL) results are to presented as reported by the laboratory. Reporting derived BDL values, for example half the detection limit, is not acceptable.
- Sample numbers and locations must be presented on base maps showing relevant geographic features (including drainage).

4.4 Geological mapping

- All geological maps must be line drawings with graphical and/or alphanumeric symbols for rock units, and are to show geographic features.
- Geological mapping results are to be presented as geological ‘fact’ maps and as interpreted maps.

- Where a complicated system of abbreviations is used on geological 'fact' maps, an index of these abbreviations is to be included in the report, but not necessarily listed on each map. All interpretative maps must include a legend.
- Currently valid formal stratigraphic names as defined in Geoscience Australia's Stratigraphic Units Database should be used in preference to informal nomenclature wherever possible.
- A discussion/interpretation of geological mapping results is to be included with the description of geology investigations.
- Geological information used on maps and in the text which is not the result of original work is to be acknowledged appropriately.
- Petrological descriptions and geological observations are to be submitted as digital tabular data in tab or comma delimited ASCII file format. Sample locations are to be indicated by MGA (GDA94)co-ordinates and shown on appropriate plans (or listed in drill logs).
- All plans should be A-series page size with an upper limit of A0 (i.e. 1189 x 841 mm), and be at a scale related to that of the standard map series (e.g. 1:250,000, 1:100,000, 1:50,000, 1:25,000, 1:10,000, 1:5,000, 1:2,500, 1:2,000, 1:1,000).
- Shaded or coloured features should be designed so that black and white reproduction is possible, e.g. geological units should be bounded by closed polygons and include a code or mnemonic.
- Standard specifications for drafting of plans are also provided in the Geoscience Australia (BMR) publication Symbols used on geological maps (1989).
- Metric measurements are to be used throughout.
- Maps and plans should use MGA (GDA94) and show the following:
  - ◊ Maps should show sufficient base information (i.e. geographic features) for the maps to be related to standard topographic maps.
  - ◊ A graphic scale bar in metric units.
  - ◊ A north point or arrow (grid/true and/or magnetic north), or orientation of sections.
  - ◊ A clear and comprehensive legend (Symbols used on geological maps, Geoscience Australia [BMR]; and the Field Geologists' Manual, AusIMM, are recommended resources).

4.5 Geophysics

The principal requirements for reporting of geophysical investigations are:

- Geophysical survey data must be presented digitally and be accompanied by a detailed description of the digital data submitted.
- Relevant operations and processing reports must be submitted.
- Specifications of geophysical surveys (e.g. for airborne geophysical surveys — altitude, line spacing, station spacing, type of aircraft).
- Specifications of instruments used (notably type, design, power, accuracy, precision), units of measurement (preferably SI units) and mode of recording data (i.e. analogue or digital).
- Traverse lines, and station intervals on lines, should be presented on maps showing geographic features and the MGA, together with significant cultural features which may affect results (e.g. power lines).
- All data should be in accordance with ASEG technical standards (ASEG-GDF2 or ASEG-ESF standard, as appropriate).
- Data should presented both as original basic data (tabulated, line profiles) and as processed data.
- Data on each medium should be free from error.

Gravity surveys are to include details of position (MGA or longitude/latitude (GDA94)), Australian Height Datum (AHD) elevation and observed gravity (AAGD07) for each station. All drift/diurnal/tie corrections should have been made and location and geophysical data merged.

Passive seismic survey reporting must include:

- A copy of the continuous data in miniSEED format. The data should be uncompressed. The trace data should be identical to the raw data, with no downsampling or response correction applied. Units of raw data must be specified e.g. instrument counts or millivolts. The header of miniSEED should contain the following information (minimum): a component name, station name, sampling rate, and start time (in UTC). The time correction (GPS-based) should be either applied to the miniSEED or preserved in the relevant header.

- The instrument response, including gain, for each sensor and digitiser, in StationXML format unique to each station (sampling point).
- A text-based CSV file showing the geographical coordinates (latitude, longitude, altitude) of operated stations as a function of time.
- Examples:
  - ◊ Gravity survey: station number, longitude/latitude (GDA94) co-ordinates, AHD elevation, absolute observed gravity, terrain correction;
  - ◊ Aerial survey: MGA or longitude/latitude (GDA94) co-ordinates, parameters after correction in located data format.
  - ◊ Geoscience Australia's 'Airborne Magnetic and Radiometric Technical Standards - Data Acquisition, Processing and Supply' (Goodwin, 2023) represents best practice, that should be adhered to as far as possible.

4.6 Ore reserves and resources

- Ore reserves and/or resource estimations are to be reported in full (including the method(s) used for calculating ore reserves) and must be in accordance with the classification and terminology defined in the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves (The JORC Code) (Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists, and the Australian Mining Industry Council, 2012).
- Reporting of coal reserves should follow the Australian guidelines for the estimation and classification of coal resources 2014 edition.
- Details of petroleum or geothermal substances resources and reserves must be provided in accordance with the current approved standards for those commodities.

4.7 Remote sensing and LIDAR

- A description of the type of survey.
- Image location, description, presentation and interpretation.
- Where lodgement of a data set would breach data licencing conditions alternatives are acceptable. For example a Landsat scene cannot be lodged in ERMapper format, but can be lodged as a TIFF format image.
- LiDAR data should be presented as both original basic data (e.g. Las files) and as processed data (e.g. DTM rasters).

4.8 3D Modelling

3D modelling work undertaken must be submitted in a format that is in accordance with the Australian Requirements for the submission of Digital Exploration Data.

These requirements state that companies need to provide the following:

- Sufficient files and associated files to regenerate the models.
- Details of software and version used.
- Model extents in MGA (GDA94).
- Local grid transformation data if required.
- Model points, lines and surfaces as dxf files (or as ASCII point sets or ASCII line strings for point and line objects).

In addition to these standards, MRT requires a summary list of all lithostratigraphic units in the model. The submission of native 3D model formats is also welcomed (e.g. Datamine, Leapfrog, GoCAD, Surpac, GeoModeller), but these should be accompanied by a version of the model in the format described above.

5.0 DIGITAL DATA AND FORMATS

MRT's digital data reporting requirements have been developed to closely align with the national digital data reporting standards used throughout Australia. The national digital data reporting standards are developed by the Government Geoscience Information Committee (GGIC). The national standards are designed to ensure that essential metadata and supporting data types, such as authority tables, are included with tabular digital data.

Detailed descriptions on national digital data reporting standards can be found in the Australian Requirements for the Submission of Digital Exploration Data.

5.1 Digital reports

Digital reports should follow the structure and sequence in Section 3.2, 3.3 and 3.4 as relevant to the type of report. They must be submitted on Microsoft Windows-compatible media.

Files must be virus free and not have a password or other form of security protection. The main part of the report should be provided in Adobe Acrobat portable document format (PDF). All reports must use the MGA (GDA94) coordinate system.

5.1.1 Composition of the digital report

- A summary list of all digital files comprising the digital report.
- Report text, table of contents, abstracts, maps, small tables, plans and figures that are part of the main body of the report and small appendices as a single PDF file, size permitting.
- Tabular data including surface locations, surface and down-hole geochemistry, down-hole lithology descriptions and drilling data must be supplied using the templates for digital tabular data (see Section 5.6 – Templates for digital data).
- Other tabular data (e.g. ground geophysical data) must be supplied as plain text (ASCII) files, tab or comma delimited (e.g. csv file).

5.2 File name convention

File names should conform to the following file naming convention:

Tenement_id_YYYYMM_##_{data type}.eee

Table 1. Acceptable file name convention.

Name Convention	Description	Example
Tenement id	Identifier for the tenement	EL051999
YYYYMM	Report date, representing year and month	200003
##	Sequential number for each file submitted	03
{data type}	Data type contained in the file. For example - Report, Map, Geochem, Appendix	Appendix
.eee	File extension. For example - .pdf, .txt, .jpg, .tif	.txt

For example EL051999_200003_03_appendix.txt is the third file of the March 2000 report for EL 5/1999.

5.3 Metadata

Tabulated data must include a header containing essential information about the data (metadata). Metadata should provide sufficient information about the dataset for it to be used in the future. Templates that specify the metadata required and the format of header information are supplied for several data types in Section 5.6 - Templates for digital data.

Metadata should include:

- Name of the company for whom the data were produced.
- Tenement(s) under which the data were produced.
- Activity which produced the data.
- Location of the data (or a pointer to a file providing this information)
- Date the data were produced and/or altered.
- Parameters controlling the data acquisition and/or processing.
- Name of the contractor producing the data.
- Any translation parameters required for conversion of the data (especially location data).
- Equipment used to generate the data.
- Original format of the data.
- The definition of codes used to present or classify the data.

5.4 Photographs

Photographs not included in the report text are to be submitted as JPEG files. All photographs must be submitted with an index file containing photograph metadata (location coordinates, datum and date taken) in tabular format (preferably .csv).

5.5 Core photographs

No more than two core trays per photograph. Relevant detiails required are:

- Drill hole name/number.
- Tray number.
- Depth from and depth to.
- Core condition ‘wet or dry’.

The above information may be included on each image and/or in an index file in tabular format also including the photo name/number.

5.6 Templates for digital data

Software and data templates have been developed to ensure that essential metadata and the formatting of file header information (as specified by the GGIC) is included with tabular exploration data.

Software (Mineral exploration reporting template software) to assist in generating compliant exploration report files is available free of charge from the Australian Minerals website www.australiaminerals.gov.au. The Mineral Exploration Reporting Templates (MRT) software allows the generation of metadata headers for files of tabular drilling and geochemical data, and a listing of all the files in the report.

As an alternative to using the MRT software, templates that combine header metadata (as specified by the GGIC) with tabular data have been developed by Mineral Resources Tasmania (see Table 2) for the following exploration data types:

- Downhole geochemistry.
- Downhole lithology.
- Downhole survey.
- Quality assurance and control (for geochemical data).
- Surface geochemistry.
- Surface location (for surface samples and drill collars).

Templates for the submission of digital tabular data with instructions and examples are available for download from the Mineral Resources Tasmania website.

Table 2. Templates for the submission of digital tabular data.

Template	Data type	Template description
SL_1	Surface point locations, drill collars	Submission of point location data for surface samples and drill hole collars.
SG_1	Surface geochemistry	Submission of geochemical analyses of surface samples
DG_1	Downhole geochemistry	Submission of geochemical analyses of drill hole samples
QAQC_1	Geochemistry quality assurance/quality control	Submission of laboratory/field duplicates, standards and blanks
DS_1	Downhole directional survey	Submission of drill hole deviation survey data
DL_1	Downhole lithological logs	Submission of drill hole lithology logs
Filelisting	File list	File verification list

6.0 RESOURCES

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2. *Australian guidelines for the estimation and classification of coal resources,* 2014 edition: http://www.jorc.org/docs/Coal_Guidelines_2014_-_Final_Ratified_Document.pdf
3. Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves (The JORC Code) (Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists, and the Australian Mining Industry Council, 2012). http://jorc.org/docs/jorc_code_2012.pdf
4. Australian Requirements for the Submission of Digital Exploration Data http://www.australiaminerals.gov.au/__data/assets/pdf_file/0004/60772/National_Guidelines_Version_4.5_February_18.pdf
5. Australian Society of Exploration Geophysicists ASEG data standards. https://www.aseg.org.au/technical/aseg-technical-standards
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7. Geoscience Australia Stratigraphic Units Database. http://dbforms.ga.gov.au/www/geodx.strat_units.int
8. Mineral exploration reporting template software. www.australiaminerals.gov.au.
9. *Mineral Resources Development Act 1995.* https://www.legislation.tas.gov.au/view/html/inforce/current/act-1995-116
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