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Exploration reporting: A guide for reporting on exploration and prospecting in New South Wales

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Table 1 Website links for further information

Subject	Website links
Key contacts	www.regional.nsw.gov.au/meg/contacting-meg
Exploration reporting guidance and templates Annual activity reporting	www.regional.nsw.gov.au/meg/exploring-and-mining/compliance-and-reporting/exploration-reporting
Titles Management System (TMS)	www.regional.nsw.gov.au/meg/exploring-and-mining/titles-management-system
Large File Exchange Service (LaFix)	www.regional.nsw.gov.au/meg/geoscience/products-and-data/company-exploration-reports/online-services/lafix

Purpose

This guideline specifies the structure, content and data format requirements for annual, partial relinquishment and final reports submitted for authorities under the *Mining Act 1992*.

This guideline sets out requirements of reports as per clause 62 of the Mining Regulation 2016.

An **authority** means an exploration licence, assessment lease or mining lease granted under the *Mining Act 1992*.

Annual, partial relinquishment and final reports submitted under this guideline should present the technical results and geological interpretation of exploration and prospecting activities carried out under an authority.

Exploration has the same meaning as in the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007. Exploration includes taking of samples, and the assessment of deposits, of minerals, petroleum and extractive materials.

Commencement

This guideline comes into effect on the date of publication. Reports and data submitted in formats specified in the previous version of this guideline will be accepted up until 31 December 2021.

Application

Annual, partial relinquishment and final reports are required to be submitted for all authorities, unless:

- exempted by an order made under cl 68(1) of the Mining Regulation 2016, or
- reporting is explicitly not required in accordance with the conditions of an authority.

Reporting requirements for authorities

General

Reports must comply with the reporting requirements of the legislation (Division 3A of Part 8 of the *Mining Act 1992* and Part 5 of the *Mining Regulation 2016*). Reports are to contain all maps, plans and data that are necessary to satisfactorily interpret and evaluate the report.

It is an offence to fail to prepare or lodge a report as required by the legislation, without a reasonable excuse (section 163C(3) *Mining Act 1992*). It is also an offence to provide false or misleading information in a report (section 378C *Mining Act 1992*).

No personal information should be included that identifies a person and is not already in a publicly available publication. For example, a person's name, address, photograph or other image.

Summary reporting requirements

Annual reports

Legislative reference	Section 163C <i>Mining Act 1992</i> Clause 59 <i>Mining Regulation 2016</i>
Lodgement	Due within one calendar month after the authority grant anniversary date or such other date notified by the Secretary of Regional New South Wales in writing.
Confidentiality period ¹	Part A – Confidential for five-year period from date of lodgement. Part B – Confidential for the life of the authority.

Partial relinquishment reports

Legislative reference	Section 163C <i>Mining Act 1992</i> Clause 60 <i>Mining Regulation 2016</i>
Lodgement	Due within one calendar month after the Secretary gives notice of the partial cancellation or partial renewal of an authority.
Confidentiality period	Immediately released after MEG review unless related to a flow-on authority.

Final reports

Legislative reference	Section 163C <i>Mining Act 1992</i> Clause 61 <i>Mining Regulation 2016</i>
Lodgement	Due within one calendar month after the cancellation or expiry of the authority.
Confidentiality period	Immediately released after MEG review unless related to a flow-on authority.

¹ Note: disclosure of confidential information may be authorised under s.365 of the *Mining Act 1992*.

Data

All data collected during the reporting period and that is necessary to satisfactorily interpret and evaluate a report must be submitted with the report.

This data must be submitted in the formats specified in the Submitting reports and digital data section.

Raw and observed data will become open file five years after submission and interpreted data will remain confidential for the life of the authority. The confidentiality period for different data categories is detailed in Table 9.

Data that is incomplete or outstanding at time of reporting can be submitted at a later date once the data is received (for example, analytical data that has not yet been received at time of reporting etc). Where this occurs, the submission must indicate that there is additional data to be submitted, and when it will likely be submitted. All analytical data submitted at a later date must include location details. This may mean drillhole and sample information needs to be resubmitted when the analytical data is submitted.

Group reporting (mining leases only)

Group reporting is only available for contiguous mining leases that are operated as a single project. Group reporting for ELs and ALs is not accepted.

Applications for group reporting must be lodged with and approved by Mining, Exploration and Geoscience (MEG) in letter format emailed to the [Mining and Exploration Assessment](#) (MEA) unit.

Activity and expenditure

A summary of all activities completed, and expenditure incurred for the current reporting period must be submitted digitally through the MEG approved online submission portal at the time of report submission. See Table 10 for examples of the activity categories to report on.

Report structure

All reports must follow the structure specified below for each report type, see Table 2 for annual reports, Table 3 for partial relinquishment reports and Table 4 for final reports.

Annual reports

Annual reports must provide details of all exploration activities undertaken during the 12-month reporting period. This report is split into Part A and Part B to accommodate the separation of commercially sensitive and/or proprietary information which will remain confidential for the life of the authority as per the *Annual report release policy*.

Part A must include details of all exploration activities, including all geoscientific data collected during the reporting period. Part B will include any commercially sensitive and/or proprietary information such as interpretations, proposed exploration in next reporting period, full resource and reserve reports, financial assumptions etc. that will remain confidential for the life of the authority.

Table 2 Details of annual report structure and content requirements

Report section	Content
Part A (Confidential for 5-year period from date of lodgement).	
Title page	Cover page
Executive summary	A brief review of all exploration activities and significant results from the current reporting period.
Authority information and previous exploration	A description of the authority and history of exploration.
Location and access	Summary of location including nearby towns and a clear map showing the authority boundary, towns and major infrastructure, a scale, and a north arrow. Note: Do not include personal information for land access.
Geology	Summary of regional and local geology including a geological map of the area.
Exploration rationale	A description of the type of deposit sought and reasons for considering the area prospective.
Exploration completed during reporting period	A description of all exploration activities completed during the reporting period using relevant sub-headings, and a clear map showing the locations of all exploration activities undertaken during reporting period including authority boundary, towns and major infrastructure, a scale, and a north arrow. Sub-headings may include: <ul style="list-style-type: none"> Review and compilation activities Work on historical datasets Mapping

Report section	Content
	<ul style="list-style-type: none"> • Sampling • Drilling • Geophysical surveys and remote sensing • Other activities <p>Further requirements for assessment and mining leases:</p> <p>For the following activities, if applicable, a summary is required in Part A and further details are required in Part B:</p> <ul style="list-style-type: none"> • Resource and reserve estimates • Metallurgical/washery/processing studies • Economic modelling/feasibility studies • Geological findings in the mine
Data	A summary of data being submitted in the report within the relevant reporting period, including a summary of any data not being submitted, including reasons why the data is not being submitted with the report and when and how the data will be submitted.
Conclusions and recommendations	<p>A description of the conclusions reached from all reportable exploration activities and recommendations for further work, including the main conclusions from external studies.</p> <p>Note: Any commercially sensitive and/or proprietary information to be included in Part B.</p>
References	List of all documents referred to in the report.
Appendices	<p>Any operational, analytical and interpretation reports completed as part of a reportable exploration activity, that are best provided as separate documents. This may include copies of consultant and other ancillary reports relevant to the report.</p> <p>Note: Appendix reports which include any commercially sensitive and/or proprietary information to be included in Part B.</p>
Part B* (Confidential for the life of the authority).	
Title page*	Cover page
Interpretation and discussion*	Details and significance of all interpretations and a discussion of all geological and geophysical anomalies identified.
Proposed exploration in next reporting period*	A description of the exploration activities and operations proposed to be conducted during the next 12-month period, including a clear map showing the location of all proposed exploration activities and/or mining operations, the authority boundary, towns and major infrastructure, a scale and north arrow.
Resource and reserve estimates	Estimates of resources and/or reserves.

Report section	Content
Metallurgical/washery/processing studies	A description of all metallurgical, washery and processing studies completed.
Economic modelling/feasibility studies	A description of all economic modelling or feasibility studies completed.
Mining operations and production statistics	A description of current mining operations and production statistics including amount of material mined and amount of ore shipped.
Geology findings in the mine	Interpretative results from geological mapping carried out in the mine area.
Commercially sensitive and/or proprietary information	Details of methodologies, interpretations and results related to activities completed during the reporting period that is considered commercially sensitive and/or proprietary, including a statement explaining why the information is considered to be commercially sensitive.
Appendices	Any operational, analytical and interpretation reports completed as part of a reportable exploration activity, that are best provided as separate documents and which include commercially sensitive and/or proprietary information . This may include copies of consultant and other ancillary reports relevant to the report.

Note: Part B* must include as a minimum the following sections:

- Title page
- Interpretation and discussion
- Proposed exploration in next reporting period

Partial relinquishment reports

A partial relinquishment report must provide details of all exploration activities carried out over the relinquished area from the date of grant of the authority to the relinquishment date. That is the area of land which formed part of the authority before the partial cancellation or partial renewal.

All geoscientific data relevant to the relinquished area must be resubmitted to enable effective data release. This applies to all partial relinquishments, including those that are a result of authority transfer or grant of a flow-on authority.

Table 3 Details of partial relinquishment report structure and content requirements

Report section	Content
Title page	Cover page
Executive summary	A brief review of all exploration activities completed and significant results over the life of the authority area being relinquished, and reasons for relinquishment.
Authority information and previous exploration	A description of the authority and history of exploration.
Location and access	Summary of location including nearby towns and a clear map showing the authority boundary, the area to be relinquished, towns and major infrastructure, a scale, and a north arrow. Note: Do not include personal information for land access.
Geology	Summary of regional and local geology including a geological map of the area.
Exploration rationale	A description of the type of deposit sought and reasons for considering the area prospective.
Total exploration completed	A description of all exploration activities undertaken during the life of the authority over the area being relinquished or cancelled, including any relevant assessment and mining activities. This section must include all commercially sensitive and/or proprietary information reported in Part B of previous annual reports which relate to the relinquished or cancelled area.
Data	A summary of all exploration data collected over the relinquished area over the life of the authority.
Conclusions and recommendations	A description of the conclusions and recommendations from exploration activities completed on the relinquished area, including any relevant assessment and mining activities, and reasons for relinquishment.
References	List of all documents referred to in the report.
Appendices	Any operational, analytical and interpretation reports completed as part of a reportable exploration activity, that are best provided as separate documents. This may include copies of consultant and other ancillary reports relevant to the report.

Final reports

A final report must be a full report on all exploration carried out for the life of the authority, from the grant date to relinquishment or cancellation date.

All geoscientific data not previously submitted must be submitted.

Where the authority has been part of [group reporting](#) all data relevant to this authority must be submitted to enable effective data release.

Table 4 Details of final report structure and content requirements

Section	Content
Title page	Cover page
Executive summary	A brief review of all exploration activities completed during the life of the authority and reasons for cancellation.
Authority information and previous exploration	A description of the authority and history of exploration. This should include a description and a map of changes to the authority area over life of the authority where partial relinquishments have occurred.
Location and access	Summary of location including nearby towns and a clear map showing authority boundary, towns and major infrastructure, a scale and a north arrow. Note: Do not include personal information for land access.
Geology	Summary of regional and local geology including a geological map of the area.
Total exploration completed	A description of all exploration activities carried out during the life of the authority, including any relevant assessment and mining activities, over the authority area. This section must include all commercially sensitive and/or proprietary information reported in Part B of previous annual reports. For the avoidance of doubt, this does not require resubmitting information for any relinquished or cancelled area that was reported in a previous partial relinquishment report.
Data	A summary of all exploration data collected over the life of the authority.
Conclusions and recommendations	A description of the conclusions and recommendations reached from all exploration activities carried out during the life of the authority, including any relevant assessment and mining activities, and reasons for relinquishment or cancellation.
References	List of all documents referred to in the report
Appendices	Any operational, analytical and interpretation reports completed as part of a reportable exploration activity, that are best provided as separate documents. This may include copies of consultant and other ancillary reports relevant to the report.

Report section content requirements

The details specified below provides a guide to information that should be supplied in each section of the report.

Title page

This must include the following information

1. Report type (annual, partial relinquishment or final)
2. Authority number
3. Authority holder
4. Grant date
5. Expiry date or for partial relinquishment report the partial relinquishment date
6. Authority operator (if applicable)
7. Project name or location (if applicable)
8. Reporting period
9. Date of report
10. Author/s

Executive summary (maximum one page)

A brief review of all exploration activities and significant results from the current reporting period must be provided. This should be concise and provide an effective summary of all exploration activities and results from the current reporting period and a summary of any data and results still outstanding.

Where relevant the following should be reported for the **current reporting period**:

- summary of all exploration activities and other technical investigations undertaken including number of drillholes, surface samples or line kilometres surveyed
- summary of the results and key technical findings of the exploration activities including commodities assessed and the outcomes of the investigations.

Note: For partial relinquishment and final reports this section should include a review of all exploration activities and significant results for the full life of the authority and include a brief summary of reasons for relinquishment or cancellation.

Authority information and previous exploration

A description of the authority and history of exploration in the area must include:

- grant date and current term of the authority
- the area of the authority, described in blocks and/or sub-blocks or hectares
- current authority holder/s
- details of any relinquishments, transfers or joint ventures since grant date
- details of previous historical exploration carried out over the area by previous and current authority holder/s.

A table format is acceptable.

It is acknowledged that this information may not change from year-to-year and it is acceptable to submit the same information as a previous year if there are no changes.

Location and access

A brief description of the location of the authority in relation to the nearest town and how to access the area. Include a clear map showing authority boundary, towns and major infrastructure, a scale and a north arrow.

It is acknowledged that this information may not change from year-to-year and it is acceptable to submit the same information as a previous year if there are no changes.

Note: Do not provide any personal contact details.

Geology

Describe the regional geology including the geological province, sub-province or basin, the major tectonic, structural, stratigraphic and lithological features and an overview of the regional geological context. Include details of the current understanding of the prospect-scale geology and mineralisation with reference to how this applies to the mineral and deposit type being explored or mined. Include a geological map showing the geology and authority boundary.

It is acknowledged that this information may not change from year to year and it is acceptable to submit the same information as a previous year if there are no changes.

Exploration rationale

Describe the type of mineralisation and deposit style sought and reasons for considering this area prospective.

It is acknowledged that this information may not change from year to year and it is acceptable to submit the same information as a previous year if there are no changes.

Exploration completed during reporting period

Provide a detailed description of all exploration activities undertaken on the authority during the reporting period, including full details and results of all studies, surveys, sampling and drilling programs, assessment activities or other operations conducted. Include a map showing the location of exploration activities undertaken within the reporting period, including authority boundary, towns and major infrastructure, a scale, and a north arrow.

Note: Where [commercially sensitive and/or proprietary information](#) is to be reported, Part A should include a summary of the activities under the relevant sub-headings and Part B should include the full details, including the commercially sensitive and/or proprietary information of each activity under the relevant sub-headings.

Review and compilation activities

A summary of office studies including data reviews, geological interpretation and modelling, target generation and prioritisation.

Work on historical datasets

A description of all work done on historical datasets such as digitising historical datasets, resurveying historical collars and re-assaying and re-logging historical drill core or sample pulps that generates new data. All new data generated from historical exploration activities must be submitted and clearly described as historical and include the Geological Survey of NSW SITE_ID where possible.

Mapping

Mapping to be reported is geological mapping for exploration and prospecting purposes. A description of any geological mapping completed which must include:

- type of mapping completed
- locations of samples and observations
- reference to sample results, including any petrological descriptions.

This section must include geological maps for the area/s mapped and include were relevant surface geology, structure, stratigraphy, alteration, mineralisation, mineralogy, weathering etc. The map must include a clear and concise legend and identification symbols for all rock units.

Sampling

A description of all sampling completed for exploration or assessment purposes, including detailed description of each sample type, sampling method (e.g. sieved -80 mesh, etc.) and analytical methods, including handheld XRF and isotopic analysis.

Samples to be reported may include rock chip samples, soil samples, stream sediment samples, surface drill (shallow auger, vacuum) samples, vegetation or water samples taken for geochemical analysis, costean samples, and other geological samples for exploration and prospecting purposes.

A discussion of results is also required including any significant or anomalous zones identified and the methods used to determine these areas. A brief statement detailing quality control information such as laboratory and field duplicates, standards and blanks must be included. A scaled map must be included showing location and significant results for all exploration samples.

Drilling

A description of all drilling and associated sampling completed for exploration and prospecting purposes. This should include a detailed description of drill sample type, sampling method and analytical methods, including handheld XRF analysis. Details of geological and downhole geophysical logging must be included in this section.

A discussion of results is also required including any significant or anomalous zones identified and the methods used to determine these areas. A brief statement detailing quality control information such as laboratory and field duplicates, standards and blanks must be included. A scaled map must be included showing location of all drilling and location of significant results.

Geophysical surveys and remote sensing

A description of all geophysical surveys conducted, irrespective of the acquisition vehicle and method. This may include magnetic, gravity, radiometric, seismic, electric and electromagnetic), remote sensing data (includes LiDAR, hyperspectral and aerial photography), and drone-based surveys. The information must be detailed enough to enable another operator to use the data and include:

- specifications of the survey and instruments
- units of measurement and order of accuracy
- conversion factors in any units not in SI units
- date of survey
- details of any contractor
- scaled map showing the survey lines, features that may impact results and authority boundary.

This information is generally supplied in the geophysical contractor's logistics, operations or interpretation report.

Resource and reserve estimates

Estimates of resources and/or reserves must be provided. These must be submitted regardless of whether they are Joint Ore Reserves Committee (JORC) compliant or not, providing a statement to that effect. When available, estimates of resources and/or reserves should be JORC compliant.

For **annual reports**, information in Part A must include a resource and reserve summary and include the following factors:

- geology and geological interpretation
- sampling and sub-sampling techniques
- drilling techniques
- criteria used for classification, including drill and data spacing and distribution
- sample analysis method
- estimation methodology
- cut-off grade/s including basis for cut-off grade/s
- mining and metallurgical methods and parameters and other material modifying factors considered.

Note: All commercially sensitive and/or proprietary discussion of interpretations and methods should be included in Part B. Any resource and reserve report or models submitted will remain confidential for the life of the authority, see Table 9.

Metallurgical/washery/processing studies

A description of all metallurgical, washery and processing studies completed.

Economic modelling/feasibility studies

A description of all economic modelling or feasibility studies completed, this includes concept studies, pre-feasibility studies, bankability studies etc.

Mining operations and production statistics

A description of current mining operations and production statistics.

Geology findings in the mine

A summary of exploration mapping conducted in the mine, such as geological and structural mapping, petrological and mineralogical studies. A summary of stratigraphy, distribution and controls of mineralisation, alteration features etc, should be included where available.

Other activities

A description of the methods and outcomes of all other exploration, assessment or mining activities completed during the reporting period must be included under relevant headings i.e. petrography, lithochemical study, PhD etc. Where there have been external studies, such as university thesis sponsored by the company, or where research papers have been prepared for publication, the papers should be provided or the main conclusions of those works should be summarised and a reference to the full work provided.

Total exploration completed

For **partial relinquishment** and **final reports** full details of all exploration activities, completed since grant of the authority on the area to be relinquished or cancelled must be provided. This should include an inventory of all core and samples collected, their storage locations and plans for future storage and a clear map showing the location of all exploration activities completed during the life of the authority.

Note: If an authority holder intends to dispose of any drillcore, cuttings or samples during the life of an authority or after it is relinquished or expires, the company must offer all such material to the Secretary for [archiving](#).

For ALs and MLs being relinquished or cancelled additional details, where relevant, should include:

- most recent resource and reserve statements
- details of metallurgical/washery/processing studies completed
- details of economic modelling/feasibility studies completed
- details of marketing studies completed
- life of mine production statistics including amount of material mined and amount of ore shipped
- details of the nature of resources grade and quality in mine waste
- an assessment of any future mining potential in the relinquished area
- a summary of the mine geology, including stratigraphic details, structure, any petrological and mineralogical studies, distribution and control of mineralisation, alteration features etc.

Interpretation and discussion

This should include details and significance of all interpretations and a discussion of all geological and geophysical anomalies identified. This should include details of the key attributes that may affect progression of the exploration target, or for more advanced projects, the ability to mine or market the resource where relevant.

Data

This should be a summary of all data being submitted with this report. This should also include if relevant a summary of any data from the current reporting period which is not being submitted with reasons why and when and how the data will be submitted i.e. laboratory results pending and will be submitted with next annual report, offline submission etc.

For partial relinquishment reports all exploration data collected over the relinquished area over the life of the authority must be submitted with this report even if it has previously been submitted with previous annual reports.

This also applies to partial relinquishments that are a result of authority transfer or flow-on authority, to ensure all relevant data can be made open file on relinquishment of the flow-on authority. This must include all data previously submitted in Part B of previous annual reports.

For final reports any exploration data that has not been previously submitted must be submitted with this report. Where the authority has been part of [group reporting](#) all data relevant to this authority must be submitted to enable effective data release.

Proposed exploration in next reporting period

A description of the proposed exploration activities and/or mining operations to be undertaken within the next reporting period. Table format is acceptable for this section. A clear map must be included showing the location of all proposed exploration activities and/or mining operations, authority boundary, towns and major infrastructure, a scale and north arrow.

Conclusions and recommendations

State the conclusions from all reportable exploration activities and recommendations for future work, including the main conclusions from external studies.

For **partial relinquishment** and **final reports** details of the reasons for relinquishment or surrender must be provided. The statement should include, where relevant, information on:

- geological factors – quantity or quality of targets or resources
- environmental or social factors – inability to secure access
- technical factors – viable future extraction or processing resources
- economic factors – unfavourable market demand and supply conditions
- administrative factors – consolidation of authority into a flow-on authority.

Commercially sensitive and/or proprietary information

A description of methodologies, interpretations and results related to activities completed during the reporting period that is considered commercially sensitive and/or proprietary including a statement explaining why the information is considered to be commercially sensitive and/or proprietary. This must be written under similar headings as Part A i.e. Current Exploration Activities – Surface sampling etc. Commercially sensitive information may include:

- the results of confidential processes or procedures which use unique methodologies developed inhouse, including consultant developed methodologies
- geological interpretation and modelling
- proprietary mining technologies or metallurgical processes.

Note: The following are not considered commercially sensitive:

- results of research or studies that use published study methodologies
- pricing or volume data, capital expenditure or operating expenditure values if no long term contractual commitments are in place.

References

A list of all references used in the report must be provided in the standard format, see examples below.

Glen RA, MacRae GP, Pogson DJ, Scheibner E, Agostini A and Sherwin L (1985) 'Summary of the geology and controls of mineralization in the Cobar region', *Geological Survey of NSW Report GS1985/203*.

Hodgson CJ (1974) 'The geology and geological development of the Broken Hill Lode, in the new Broken Hill Consolidated mine Australia part II: Mineralogy', *Australian Journal of Earth Sciences* 22:1, 33–50.

For further formatting information see the [Australian Government style manual](#).

Appendices

Appendices may include operational, analytical and interpretation reports completed as part of a reportable exploration activity, including any consultant and other ancillary reports which are best provided as separate documents. Those appendices with [commercially sensitive and/or proprietary information](#) should be included in Part B.

Submitting reports and digital data

Method of lodgement

All reports and data must be submitted through the MEG approved online submission portal [Titles Management System \(TMS\)](#). See [TMS guide](#).

All reports and data are assessed by MEG staff and uploaded to DiGS®, an online reports and publication archive.

Acceptable file types

Only certain file types can be submitted using the online submission portal, see Table 5. Some proprietary file formats are not accepted.

File size limits

The maximum limit of a single digital file attached to a report is 1GB. Each report can have unlimited files attached.

If there are a significant number of large files to be submitted (for example, coal drill hole records, geophysical survey data), follow the process for submitting large data files greater than 1GB.

Submitting large data files greater than 1GB

Large data files may be submitted offline using:

- a digital device such as hard-drive
- a secure large file transfer application.

The report **must** still be submitted via the online submission portal and the file/s must be listed as being submitted offline. Offline data files must be formatted as for online files.

A digital device must be sent to the [Mining and Exploration Assessment \(MEA\)](#) unit within 14 days of the online submission. The digital device must be labelled with the TMS submission number, authority number, authority holder and report type.

To submit large data files through a secure file transfer application an upload request is created through the [Large File Exchange Service \(LaFix\)](#). The user will then receive an email containing the relevant link to a secure folder for uploading files.

File formats for digital data submission

Table 5 outlines the report and data formats required. All files must be virus free and not have any password or other security protection.

Note: Data categories that will become open file five years after submission and those data categories that will remain confidential for the life of the authority are shown in Table 9.

Table 5 Summary formats for reports and digital data

Data format	Description	Format	Suffix
Report text	Annual, relinquishment and final, reports. Geophysical survey logistics and interpretation reports Documents, figures etc.	Reports must be provided as PDF documents. Figures and tables may be interleaved with the text. Annual, partial relinquishment and final reports must contain the relevant section headings as specified in this guideline.	.pdf

Data format	Description	Format	Suffix
Tabular data	Point locations/drill collars Geochemistry Drilling including downhole surveys, lithology, alteration, seams, geophysics etc Geotechnical data Analytical data including geochemistry, gas, coal quality, composites, reflectance etc All relevant dictionaries including lithology, seams, geotechnical etc. New or corrected data generated from historical exploration activities	Comma or tab delimited ASCII (.csv preferred) Include GSNSW SITE_ID where possible	.csv .txt .dat
Maps, plans, figures and photos not embodied in report text	Maps, plans, figures, photos etc.	PDF GEOTIFF/TIFF JPEG PNG	.pdf .tif .jpeg .png
Geochemistry laboratory certificates	Original laboratory reports or certificates of results	PDF	.pdf
Mapping data	Original mapping point, line and vector data in GIS format	ESRI shape files MapInfo tab files	.shp, .shx, .tab, .map
Core and chip photographs		jpg or high resolution PDF	JPG preferred
Geophysical data	Raw, processed, line, point, grid and derived data	Grids: Preferred in ER Mapper Geosoft also accepted.	.grd, .ers and associated binary file
		Located data:	
		Electrical: ASEG ESF preferred, Maxwell EMIT accepted	.esf, .con, .tem
		Potential field: ASEG GDF2	.des, .dfn, .dat, .met
		Ground penetrating radar: SEG formats	.sgy, .segy, .sg2

Data format	Description	Format	Suffix
		Passive seismic: All formats accepted	All formats
		Magnetotellurics	.edi
		Other: TAB delimited ASCII with header	
Remotely sensed data (LiDAR, multi-hyperspectral)	Raw, processed, point cloud, spectral, grid data	As per <i>Australian Requirement for the Submission of Digital Exploration Data</i>	
Remotely sensed and geophysical images	Images derived from geophysical /remote sensing surveys, e.g. TMI, gravity, Landsat, ADS80.	300 dpi, georeferenced: GEOTIFF/TIFF ECW JPEG, JPEG 2000, PNG PDF	.tif .ecw .jpg .jp2 .png .pdf
Seismic data	Raw data	SEG-Y and SEG-D	.sgy and .sgd
	Processed data	SEG-Y	.sgy
	Navigation data	UKOOA P1/90	.uka
	Processed sections	Digital format with metadata (Image, PDF, vector)	.tif, .ecw, .jpg, .jp2, .png, .pdf
Geophysical log data	Processed wireline and MWD data	LAS LIS / DLIS Delimited ASCII	.las .lis .asc
	Log plots Downhole acoustic scanner – interpreted images	PDF TIFF JPEG GIF PNG	.pdf .tif .jpg, .jpeg .gif .png
	Processed downhole velocity data	SEG-Y	.sgy
3D models	3D objects	Point and grid data - Comma or tab delimited ASCII (.csv preferred)	.csv, .txt
		Surface, curve, point and grid data	.ts .pl .vs .vo .dxf

Data format	Description	Format	Suffix
	Geophysical inversion and forward modelling	UBC, VPMG, Modelvision or other inverse and forward modelling formats	.den .sus .ts .vo .dxf, .tkm
3D model interpretive data (constraining data)	Surface geological mapping, geological cross-sections, well data, seismic, topographic, gravity and magnetic data.	Georeferenced images	.jpg, .tiff, .bmp, .ers
		Comma or tab delimited ASCII (.csv preferred)	.csv
		Seismic lines SEG-Y	sgy
		Surface, curve, point and grid data	.ts .pl .vs .vo .ers .dxf
		Shapefiles	.shp

File naming convention

File names should conform to the following convention:

authority id_YYYYMM_A/P/F_##_ data type.eee

authority id - an identifier for the authority

YYYYMM - a six-digit report date representing year and month

A/P/F - one of the letters denoting Annual, Partial Relinquishment or Final Report

- a two-digit sequential number for each file submitted

data type - for the data type contained in the file (e.g. map, appendix, report, etc)

.eee - files extension (including the period). For example .pdf, .txt, .jpg, .tif

By way of example, the file 'EL4242_200106_A_03_appendix.txt' would represent the third file in the June 2001 Annual Report for Exploration Licence 4242, containing tabular data in ASCII text format.

Metadata

Metadata should provide sufficient information about a dataset for it to be used properly. The standard recommended by ANZLIC for metadata should be used where appropriate. However, some data require more information for intelligent use, and some data require specific metadata covered under other international standards.

Location coordinates

Wherever coordinates are used, the spheroid (e.g. ANS, GSR80), datum (e.g. AGD66, GDA2020, GDA94) and grid system (e.g. latitude/longitude, MGA zone 54) must be stated.

If possible, coordinates should be supplied in the geocentric datum GDA2020 (e.g. spheroid-GSR80, datum-GDA2020, grid projection-MGA), in decimal degrees. GDA94 data is also acceptable.

Images (maps, plans etc)

All images should be provided in formats specified in Table 5. They must be readable, of good print quality, and the colour and spatial data of the original plan or image should be maintained. Resolution should be generally 300 dots per inch (dpi) or better. Where applicable, a coordinate grid should be used and clearly shown on the map.

Core and chip photos

Photographs must be submitted of all drilling chips and core, where collected, in formats specified in Table 5.

Files should be named to identify the depth at the beginning or end (or both) of the chip or core trays using the following format – DDH1_Core_Photo_DepthInformation.jpg. For example DDH001_Core_Photo_123m.jpg or DDH001_Core_Photo_67m-70m.jpg

Geophysical and remotely sensed data

Acquisition results (also known as logistics reports) are required for geophysical surveys and remotely sensed surveys (such as LiDAR and hyperspectral). Geophysical survey data must adhere to the Australian Society of Exploration Geophysicists (ASEG) formats. Remotely sensed data must adhere to *the Australian Requirements for the Submission of Digital Exploration Data*. There are standards for the magnetic, radiometric, gravity, electromagnetic, digital terrain (or elevation), electrical (including resistivity, induced polarity and magnetotellurics), hyperspectral and LiDAR data.

These standards ensure that the data and metadata are captured and are forwards and backwards compatible. The most commonly used is ASEG-GDF2 which has four files:

1. A decodable format description in the primary file (survey.DFN) separates the formatting details from the data.
2. A second file contains a text description of the data (survey.DES) and survey contents.
3. The third file contains associated metadata (survey.MET) with specification details for the map datum and projection for the geophysical data.
4. The fourth file contains the geophysical data (survey.DAT). The format description file defines information such as field names, units of measurement, format, comments and missing data substitution values (nulls). The data is contained in simple, multi-column ASCII files (tables).

In addition to ASEG-GDF2 format digital point-located data, associated derived information such as grids, images or models created from the data must be submitted in the appropriate file format specified in this section. See Table 11 and Table 12 for suggested naming conventions and abbreviations.

Seismic survey data – sections

At the completion of the seismic work the following are to be supplied:

- complete legible set of observers logs, uphole records and surveyors' notes
- ASCII file of shot point location data
- complete set of field data (SEG-D or SEG-Y)
- stacked data (SEG-Y)
- final stacks (SEG-Y)
- migrated stacked sections (SEG-Y)
- digital sections (image, PDF or vector)
- Interpreted sections (graphics and/or vectors).

File names should include survey and the line name (e.g. MaitlandSS_98FSG_AAA, GunnedahSS_80-M3).

3D model data

3D model data (surfaces and interpretive data) should be provided as per Table 5.

If model uses a local grid the data should be converted to a standard geographic or projected coordinate system, or reference datum provided for the local grid.

Data requirements for mineral groups 1-8, 9A, 10 and 11

Surface and drilling data must be submitted using the approved templates. Explorers can use the template provided on the MEG website to generate the required files (Table 6).

Alternatively, explorers may utilise the 'Mineral Reporting Template' (MRT) software to generate the required templates for their exploration data. The MRT is developed and maintained by the Government Geoscience Information Committee (GGIC) to assist explorers generate mineral exploration data in the required formats.

All data reported to MEG must include location details.

Submission of geochemistry data must include specification of detection limits and be accompanied by a copy of the original certified laboratory results (PDF).

Table 6 Exploration data templates for minerals.

Template name	Label	Description
Drillhole locations	SL4	Drillhole collar locations, sample locations or other site locations. Costeaming and trenching location data to be submitted using this template.
Drillhole surveys	DS4	Downhole directional survey data
Drillhole logging	DL4	Downhole geological logs, such as lithology, alteration, mineralisation, structure etc.
Logging data dictionary	LDD4	Dictionary file specifying logging codes used
Drillhole geochemistry	DG4	Downhole geochemistry data or costeaming, trenching or vertical channel sampling in a mine pit data
Surface geochemistry	SG4	Surface sample geochemistry, including point location data
PXRF surface geochemistry	SG4_PXRF	Portable XRF data from surface locations
PXRF downhole geochemistry	DG4_PXRF	Portable XRF data from drillhole samples

Additional templates may be added in the future.

Data requirements for mineral group 9 (coal)

Coal borehole data must be submitted in the CoalLog format where collected. Information, templates and dictionaries may be found on the [CoalLog AusIMM website](#) and the preferred file naming convention is detailed in Table 7.

clCertify is available on the [CoalLog website](#) and allows explorers to validate their data prior to submission. clCertify also provides a facility to convert CoalLog data transfer files that satisfied earlier versions of CoalLog to the current standard.

Single data file submission of tabular borehole data (lithology, quality, geotechnical and gas data) is required. That is one file is to be submitted for each tabular data type (e.g. lithology). File is to include all boreholes being reported (i.e. borehole data not to be supplied on an individual borehole basis).

All other borehole data (downhole geophysics, core photos etc) must be submitted in individual ZIP files per borehole.

Where coal quality data has been supplied in CoalLog format by your laboratory, we request that you compile all laboratory reports into an individual file prior to submission.

The **Coal Borehole Summary Table** has been discontinued and this data should be supplied in the CoalLog Header format.

Table 7 Coal report and data preferred submission example

Description	Naming convention
Annual/partial relinquishment or final report	Authority id_YYYYMM_annual/partial/final report.PDF
Drillhole collar/header file	Authority id_Head.csv Drilling and cementing data must also be included under the following column headings within the Header file in lieu of the drilling and cementing logs being submitted: <ul style="list-style-type: none"> • Custom cement data (date that borehole was cemented, if applicable, in DD/MM/YYYY format) • Custom drilling company (name of drilling company that drilled borehole)
Lithology data	Authority id_Lith.csv
Analytical data	
Coal quality analysis	Authority id_Qual.csv
Composites	Authority id_Comp.csv
Clean coal composite definition	Authority id_CCCD.csv
Testing	Authority id_Test.csv
Reflectance	Authority id_Refl.csv
Geotechnical data	
Geotechnical log – Defects	Authority id_Geotech_Defe.csv
Geotechnical log – Point load testing	Authority id_Geotech_Poin.csv
Seam gas data	Authority id_Gas_Data.csv

Description	Naming convention
Water observations	Authority id_Wate.csv
Dictionaries	
Lithology dictionary	CoalLog_V3.0_Lithology_Dictionary.csv
Geotechnical dictionary	CoalLog_V3.0_Geotech_Dictionary.csv
Stratigraphic units / seams dictionary	Stratigraphic_Units_Dictionary.csv
All other borehole data (geophysical logs, core photos, acoustic scanner etc)	Borehole id_Data.ZIP

Appendix 1 – Glossary

Table 8 Glossary

Abbreviation	Description
AGD66	Australian Geodetic Datum 1966
AL	assessment lease
ANS	Australian National Spheroid
ANZLIC	Spatial Information Council in Australia and New Zealand
ASCII	American Standard Code for Information Exchange
ASEG	Australian Society of Exploration Geophysicists
AusIMM	Australasian Institute of Mining and Metallurgy
CGM / CGM+	Computer Graphics Metafile
Commercially sensitive and/or proprietary information	This includes information that is not already publicly available that if released may result in damage to a authority holder's commercial interests, intellectual property or trade secrets. This may include proprietary laboratory or other test work methods, scientific interpretations etc.
CSV	comma-separated values
DAT	data file
DES	ASEG-GDF2 supportive descriptive documentation
DFN	ASEG-GDF2 format information
DiGS	A publicly accessible online collection of reports, publications and data
DLIS	Digital Log Interchange Standard
DXF	Drawing eXchange Format
ECW	Enhanced Compression Wavelet
EL	exploration licence
EROL	Exploration and Environmental Online Lodgement
Exploration	Exploration has the same meaning as in the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007. Exploration includes taking of samples, and the assessment of deposits, of minerals, petroleum and extractive materials.

Abbreviation	Description
Flow-on authority	For the purposes of this guideline, a flow-on is where an application for a new authority has been lodged or granted over the same ground (or part thereof), during the currency of an authority and the ownership is retained for that subsequent new authority even though the authority type may change e.g. MLA/ML lodged or granted over a previous EL or AL, an ALA/AL lodged or granted over previous EL, or a consolidated EL granted over previously separate ELs.
FTP	file transfer protocol
GDA	Geocentric Datum of Australia
GDF	geographic data file
GDF2 / ASEG-GDF2	ASEG General Data Format Revision 2
GEOTIFF	georeferenced TIFF file
GGIC	Government Geoscience Information Committee
GRD	ER Mapper Grid
GSR80	Geodetic Reference System 1980
GXF	general eXchange format
IMER	Improved Management of Exploration Regulation
JORC	Australasian Joint Ore Reserves Committee
JPG / JPEG	joint photographic group
LAS	Log ASCII Standard
LIS	log interchange standard
MEA	Mineral Exploration Assessment (within GSNSW)
MGA	Map Grid of Australia
MRT	mineral reporting template
PNG	portable network graphic
Project	Any named exploration project or mining operation.
Prospecting	Prospecting has the same meaning as 'prospecting' in the <i>Mining Act 1992</i> . This means to carry out works on, or to remove samples from, land for the purpose of testing the mineral bearing qualities of the land.
SEG-Y / SGY	Drawing eXchange Format 'y' format

Abbreviation	Description
TIFF / TIF	tagged image file
TMI	total magnetic intensity
TXT	Tab delimited ASCII text file
UKOOA	United Kingdom Offshore Operators Association
UKOOA P1/90	UKOOA Post Plot Data Exchange Tape 1990 format
XML	extensible markup language
XSD	XML Schema Definition

Appendix 2 – Details of confidentiality periods for different data categories

Table 9 Confidentiality periods for different data categories

Data category	Data item	Details	Open file 5 years after submission	Confidential for life of authority
Review and compilation activities	Geological interpretation, target generation and prioritisation	Initial geological model and exploration rationale used as basis of exploration	✓	
		New interpreted geological modelling based on exploration results used for ongoing exploration targeting		✓
	Modelling – 2D and 3D	Interpreted geological units, plans and sections including for lithology, structure, mineralisation, alteration, raw and clean quality etc. This includes all details of interpreted depths and thicknesses, modelling parameters, interpolation methods etc.		✓
Work on historical datasets	Digitisation of historical datasets	Raw compiled mapping, surface sampling and drilling data including site information, sample type and purpose, assay results, geological unit etc digitised from historical maps and other files	✓	
		Interpreted geological units, other point, linear and polygonal features, anomalies etc interpreted from digitised historical datasets		✓

Data category	Data item	Details	Open file 5 years after submission	Confidential for life of authority
	Resurveying of historical collars, re-assaying and relogging of historical drillcore and sample pulps	<p>Raw compiled drilling data collected from resurveying historical collars including borehole name, coordinates, RL, total depth, datums, projections, dip and azimuth.</p> <p>Raw compiled sample details including sample name, borehole name, sample type and description, sample purpose and method, depth from and to, sample date, duplicate details etc and sampling results including laboratory details, sample preparation, analytical methods, detection limits, original laboratory certificates, details of laboratory and field duplicates, standards and blanks from resampled drillcore or sample pulps (from drillcore or surface samples).</p> <p>Observed compiled colour, rock type, weathering, bedding, alteration, weathering, mineralisation, veining, dictionary etc. from relogging of historical drillcore or surface samples</p>	✓	
		<p>Interpreted geological units, other point, linear and polygonal features, anomalies etc interpreted from resurveying and re-assaying of historical drillcore and sample pulps</p>		✓
Mapping	Field, geophysical and photogeological mapping	<p>Observed field site information including coordinates, geology, structure, stratigraphy, alteration, mineralisation, mineralogy, weathering geophysical characteristics etc at observation points, and along line and polygon traverses. This includes strike and dip measurements.</p>	✓	
		<p>Interpreted geological units, other point, linear and polygonal features</p>		✓
Surface samples - Field samples including rock chips, soil	Sample details	<p>Observed sample site name, sample date, sample type and description, sample purpose, field duplicate details, coordinates, RL, datums, projections</p>	✓	

Data category	Data item	Details	Open file 5 years after submission	Confidential for life of authority
samples, stream sediment samples, etc.	Sample geochemistry	Raw sampling results including laboratory details, sample preparation, analytical methods, detection limits, original laboratory certificates, details of laboratory and field duplicates, standards and blanks. This includes XRF details and all other portable analysis techniques.	✓	
	Geological logging	Observed colour, rock type, weathering, bedding, alteration, weathering, mineralisation, veining, structures, geological dictionaries etc.	✓	
	Rock properties	Raw rock properties such as magnetic susceptibility, density etc.	✓	
Drilling	Borehole locations	Borehole name, coordinates, RL, total depth, datums, projections, dip and azimuth	✓	
	Rehabilitation status	Details on rehab of borehole including but not limited to cementing, backfilling, capping, type/length of casing left in borehole, any objects left in borehole etc.	✓	
	Borehole metadata	Location accuracy, drilling company name, start / finish dates	✓	
	Downhole surveys	Inclination, azimuth, survey type, surveying company name, survey unique identifier, survey instrument, maximum deviation from vertical, survey computation method, distance and direction of deviation data etc.	✓	
	Geological logging	Observed colour, rock type, weathering, bedding, alteration, weathering, mineralisation, veining, structures, geological dictionaries etc.	✓	

Data category	Data item	Details	Open file 5 years after submission	Confidential for life of authority
	Geophysical and wireline logging	Raw downhole geophysical data such as magnetic susceptibility, density, resistivity, sonic logging, Acoustic Televiewer or Optical Televiewer data etc.	✓	
		Interpreted geological units, other point, linear and polygonal features and interpretation reports from downhole geophysical surveys		✓
	Geotechnical logging and sampling	Observed defects, strengths, surfaces, UCS, point load, slaking etc.	✓	
	Hyperspectral logging	Raw reflectance data and mineralogical data, along with metadata including data acquisition tool, NVCL reference etc	✓	
	Formation depths	Observed Formation names, depths	✓	
	Seam/ore details	Observed depths, thicknesses	✓	
	Sample details	Observed sample name, borehole name, sample type and description, sample purpose and method, depth from and to, sample date, duplicate details etc	✓	
	Sample geochemistry	Raw sampling results including laboratory details, sample preparation, analytical methods, detection limits, analysis dates, original laboratory certificates, details of laboratory and field duplicates, standards and blanks. This includes XRF details and all other portable analysis techniques.	✓	

Data category	Data item	Details	Open file 5 years after submission	Confidential for life of authority
	Core and chip photos	Raw photos of drill core and drill chips	✓	
	Water observations	Observed water level and flow data, including borehole name, location, depth, observation date	✓	
	Other sampling such as hydrogeochemistry etc	Raw sampling results including laboratory details, sample preparation, analytical methods, detection limits, analysis dates, original laboratory certificates, details of laboratory and field duplicates, standards and blanks	✓	
Geophysical surveys (non-seismic)	Includes all airborne and ground surveys for magnetics, gravity, hyperspectral etc.	Raw data and metadata from surveys, including grids, images, survey outlines, acquisition report and final line data provided by geophysical contractor	✓	
		Processed survey data and processing report and imagery created from basic processing	✓	
		Interpreted geological units, other point, linear and polygonal features		✓
Remote sensing	Includes satellite, LiDAR, multispectral, hyperspectral etc.	Raw data and metadata from surveys, including grids, images, survey outlines, acquisition report and final line data provided by geophysical contractor	✓	
		Processed survey data and processing reports and imagery created from basic processing	✓	
		Outcomes of interpretations including interpreted geological units, soils, vegetation etc and other point, linear and polygonal features		✓

Data category	Data item	Details	Open file 5 years after submission	Confidential for life of authority
Seismic surveys	2D and 3D seismic	Raw data and metadata from surveys, lines, bin grids survey outlines, acquisition reports and final data provided by contractor etc.	✓	
		Processed survey data and processing reports and imagery created from basic processing	✓	
		Interpreted geological units, other point, linear and polygonal features		✓
Resource and reserve estimates	Resource and reserve statement	Resource and/or reserves estimate to include a resource and reserve statement and a summary of the following factors: <ul style="list-style-type: none"> • geology and geological interpretation • sampling and sub-sampling techniques • drilling techniques • criteria used for classification, including drill and data spacing and distribution • sample analysis method • estimation methodology • cut-off grade/s including basis for cut-off grade/s • mining and metallurgical methods and parameters and other material modifying factors considered. 	✓	
	Resource and reserve modelling	Interpreted wireframes, cross sections, grids etc used to determine resource and/or reserve estimate		✓
	Resource and reserve report	Full resource and reserve reports		✓
Metallurgical/washery/processing studies	All studies related to mineral and other processing	All raw data and reports from processing studies including from ore characterisation, beneficiation, bulk sampling, washability studies etc.		✓

Data category	Data item	Details	Open file 5 years after submission	Confidential for life of authority
Economic modelling/feasibility studies	All studies related to economic modelling/feasibility	All raw data and reports from economic modelling and feasibility studies, this includes concept studies, pre-feasibility studies, bankability studies etc		✓
Mining operations and production statistics	Current mining operations	Summary of mining operations		✓
	Production statistics	Raw annual production statistics		✓
Geology findings in the mine	Geological mapping of faces and other areas throughout the mine area	Observed field site information including coordinates, geology, structure, stratigraphy, alteration, mineralisation, mineralogy, weathering geophysical characteristics etc at observation points, and along line and polygon traverses. This includes strike and dip measurements.	✓	
		Interpreted geological units, other point, linear and polygonal features		✓
Other activities	Rock property studies	All data and reports	✓	
	Petrographic studies	All data and reports	✓	
	Petrophysical studies	All data and reports	✓	
	Geotechnical surveys	All data and reports		✓

Data category	Data item	Details	Open file 5 years after submission	Confidential for life of authority
	Gas testing	All data and reports	✓	
Maps	Main report maps	Location maps, geological maps, surface sample location maps, drilling location maps, geophysical survey maps etc required in main report sections. Maps to include significant results and imagery from basic processing where relevant.	✓	
	Proposed exploration map	Map of proposed exploration activities and/or mining activities for the next reporting period		✓

Appendix 3 – Activity and expenditure table template

Activity and expenditure information, submitted via Titles Management System (TMS), is used by MEG to assess:

- exploration progress against the work program
- validating exploration data and information submitted
- assigning appropriate confidentiality to data as set out in Appendix 2 (Table 9)
- monitor industry wide trends in exploration, environmental management and community consultation.

The expenditure amounts must be reported as GST inclusive.

Guidance for compiling activity and expenditure data

When expenditure is allocated against a particular exploration activity, the report lodgement section in TMS will prompt the user to upload the supporting exploration data. For example, in the 'Activity and Expenditure' section in TMS, if the rock chip sample section was filled in, then in the 'Required Information' section in TMS, a prompt will indicate that rock chip analytical data must be supplied.

Expenditure for acquisition exploration categories is inclusive of all costs for that category and includes the costs:

- obtaining, preparing, analysing and interpreting samples and data.
- associated with accommodation, travel, equipment, and fuel
- rehabilitation costs, such as borehole sealing of drill holes
- salaries / wages of staff and contractors

Expenditure for authority management may include exploration report / data preparation and submission, native title management and compensation.

Expenditure is not required for application fees, the annual administrative levy, the annual rental fee, security deposits, and general administrative overheads such as agent fees, office rent, training, office equipment, software, administrative staff and insurance.

Expenditure for environmental activities may include environmental approvals or studies, environmental or rehabilitation management plans, rehabilitation activities, waste removal/disposal that have not been attributed to a particular exploration category.

Expenditure for community consultation activities may include stakeholder notification, provision of information, landholder liaison/negotiations, public meetings, and community consultative committees etc. It should not include compensation payments.

Expenditure for salaries / wages of staff and contractors can be included for staff and contractors where that expenditure cannot be directly attributed to a particular exploration category.

Table 10 Activity and expenditure table template

Exploration Category	Description of Activity	Quantity	Quantity	Total Expenditure (GST inclusive)
Compilation activities				
Desktop activities, literature and data review		-	-	\$
Exploration planning and logistical preparation		-	-	\$
Modelling and inversion		-	-	\$
Work on historical datasets, including data reprocessing		-	-	\$
Geophysical surveys and remote sensing				
Aerial photography / digital photogrammetry		Area (km ²)	Line kms	\$
Electromagnetic - airborne		Area (km ²)	Line kms	\$
Electromagnetic - ground		Area (km ²)	Line kms	\$
Gravity – airborne		Area (km ²)	Line kms	\$
Gravity – ground		Area (km ²)	Line kms	\$
Ground penetrating radar		Area (km ²)	Line kms	\$
Hyperspectral and multispectral satellite scanning		Area (km ²)	Line kms	\$
Induced polarisation / resistivity		Area (km ²)	Line kms	\$
LiDAR survey		Area (km ²)	Line kms	\$
Magnetic &/or radiometric - airborne		Area (km ²)	Line kms	\$
Magnetic &/or radiometric - ground		Area (km ²)	Line kms	\$
Magnetotelluric		Area (km ²)	Line kms	\$
Passive seismic		Area (km ²)	Line kms	\$
Satellite imagery		Area (km ²)	Line kms	\$

Exploration Category	Description of Activity	Quantity	Quantity	Total Expenditure (GST inclusive)
Seismic		Area (km ²)	Line kms	\$
Other geophysical survey		Area (km ²)	Line kms	\$
Hyperspectral airborne		Area (km ²)	Line kms	\$
Downhole geophysics		no. of holes	no. of metres	\$
Surface and other exploration (all costs; mapping, sampling, portable XRF, laboratory analysis and interpretation)				
Geological mapping / reconnaissance		Area (km ²)	-	\$
Costeaming		no. of samples	no. of metres	\$
Rock chips		no. of samples	-	\$
Soil samples		no. of samples	-	\$
Stream sediments		no. of samples	-	\$
Surface drill (shallow auger, vacuum)		no. of samples	-	\$
Vegetation samples		no. of samples	-	\$
Water samples		no. of samples	-	\$
Other samples		no. of samples	-	\$
Drilling and downhole geochemistry (all drill costs; drilling, sampling, portable XRF, laboratory analysis and interpretation)				
Aircore		no. of holes	no. of metres	\$
Auger		no. of holes	no. of metres	\$
Diamond		no. of holes	no. of metres	\$
Geotechnical		no. of holes	no. of metres	\$

Exploration Category	Description of Activity	Quantity	Quantity	Total Expenditure (GST inclusive)
Large diameter		no. of holes	no. of metres	\$
Open hole percussion		no. of holes	no. of metres	\$
Pre collared with diamond tail		no. of holes	no. of metres	\$
Reverse circulation percussion		no. of holes	no. of metres	\$
Rotary air blast		no. of holes	no. of metres	\$
Rotary mud		no. of holes	no. of metres	\$
Vacuum bedrock		no. of holes	no. of metres	\$
Vibratory / sonic		no. of holes	no. of metres	\$
Other drilling		no. of holes	no. of metres	\$
Other laboratory work				
Petrography		no. of samples	-	\$
Mineralogy		no. of samples	-	\$
Metallurgy		no. of samples	-	\$
Geochronology		no. of samples	-	\$
Isotopic analysis		no. of samples	-	\$
Palaeontology		no. of samples	-	\$
Other laboratory work		no. of samples	-	\$
Advanced prospect testing / resource definition activities				
Resource/reserve estimation		-	-	\$

Exploration Category	Description of Activity	Quantity	Quantity	Total Expenditure (GST inclusive)
Metallurgical / washing / processing studies		-	-	\$
Economic modelling / feasibility studies		-	-	\$
Bulk sampling / trial mining		-	-	\$
Other advanced activities or studies		-	-	\$
Administration				
Salaries / wages - Staff				\$
Salaries / wages - Contractors				\$
Authority management (including exploration report writing)				\$
Total environmental activities				\$
Total community consultation activities				\$

Appendix 4 – Naming conventions for geophysical data

Table 11 Preferred naming conventions for all submitted geophysical data

Data type or attribute	Preferred naming convention or abbreviation
Non seismic folder/file name	AIRorGND_YEAR_SurveyName_SurveyType
Seismic folder/file name	EL#####ML#####_Year_SurveyName
Grids	AreaName_GeophysAbbrev_Cellsize_CoordinateSys
Images	AreaName_GeophysAbbrev_CoordinateSys

Table 12 Abbreviations to use in geophysical file naming conventions

Description	Abbreviation
–	Use underscores as some older programs cannot deal with spaces or hyphens
Airborne electromagnetic survey	AEM
Airborne electromagnetic and magnetic survey	AEM_Mag
Airborne gravity	AG
Airborne gravity gradiometry	AGG
Airborne survey	AIR
Analytical signal	Analytical
Bouguer Anomaly using 2.67 g/cm ³ for density	BA267
Datums	AGD66, AGD84, GDA2020, GDA94, GEODETIC, LAM94, MGA54, MGA55, MGA56, UTM, WGS84
Digital Elevation Model	DEM
Downhole EM	DHEM
Dose rate	Dose
Gravity	Grav
Grid cell size	50m, 80m, 100m, 500m etc

Description	Abbreviation
Grid merge	Merge
Ground EM	EM
Ground Penetrating Radar	GPR
Ground survey	GND
Hyperspectral	HySp
Induced Polarisation	IP
Isostatic correction	Iso
Landsat7	LS7
Light Detection And Ranging	LiDAR
Magnetic survey	Mag
Magnetic and radiometric survey	MagRad
Magnetotellurics	MT
Multispectral	Mspec
Overlain layers with top layer set as partially transparent	Over
Passive seismic	Pseis
Potassium as a percentage	Kperc
Radio imaging	RIM
Radiometric survey	Rad
Reduced to Pole	RTP
Remote Sensing	RS
Satellite data	Sat
Shuttle Radar Tomography Mission	SRTM
Subaudiomagnetics	SAM
Ternary potassium, thorium and uranium image	KThU
Thorium in parts per million	Thppm

Description	Abbreviation
Tilt-filtered	Tilt
Total count	TC
Total Magnetic Intensity	TMI
Upward Continued 5km, 10km or 30km	UC5, UC10 or UC30
Uranium in parts per million	Uppm
Vertical derivatives	1VD or 2VD