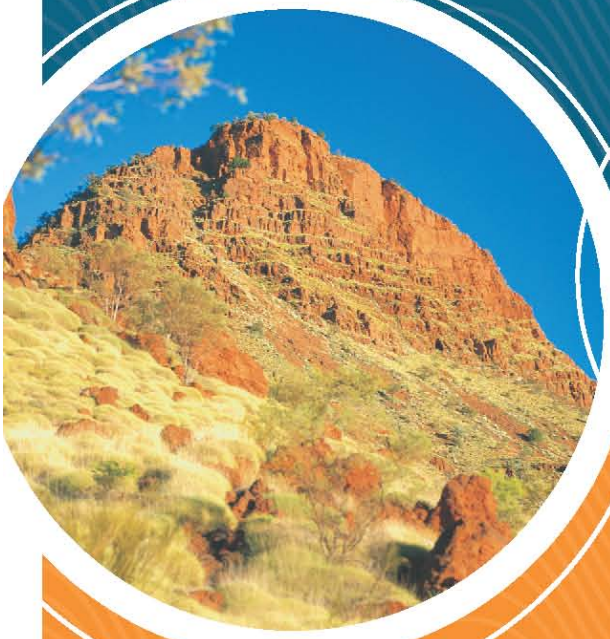
Department of Industry and Resources



Mining Environmental Management Guidelines

Mining Proposals in WA

February 2006

Environment Division

MINING PROPOSALS IN WESTERN AUSTRALIA

FOREWORD

The Guidelines for Mining Proposals in Western Australia are issued by the Department of Industry and Resources (DoIR) Western Australia to assist the mining industry in producing mining proposals.

A mining proposal is submitted to DoIR and other government departments for assessment of the environmental impacts of a proposed mining operation. If approved, the mining proposal is used to determine the environmental conditions for approval. The environmental management commitments within the mining proposal also become conditions of approval.

The mining proposal is also submitted to DoIR as part of the requirements when applying for a mining lease or general purpose lease.

The Director General of Mines (DoIR) has approved the guidelines in accordance with Section 70 O of the Mining Amendment Act 2004 proclaimed on 10 February 2006.

Before proclamation of the Mining Amendment Act 2004, the mining proposal was known as a notice of intent (NOI). The Guidelines for Mining Proposals supersede the Department of Minerals and Energy Guidelines to help you get Environmental Approvals for Mining Projects in Western Australia (March 1998).

The Guidelines for Mining Proposals will be issued periodically in response to new legislative requirements and to improve, or streamline, the approval process. To ensure that you are using the latest edition of the guidelines, please refer to the DoIR website at:

http://www.doir.wa.gov.au/environment/D3EDAEF4AF5444B387556F666CCF00A4.asp

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1 INTRODUCTION

The Department of Industry and Resources (DoIR) has a leading role in facilitating the responsible development of mining for the benefit of the people of Western Australia.

Responsible development means that mining is conducted to meet best practice environmental and rehabilitation standards from the initial planing stage, through the operational phase to decommissioning and closure.

DoIR administers and regulates the activities of the mining industry under the provisions of the *Mining Act 1978.* Environmental approval for mining activities is one aspect governed by this Act. Following recent amendments to the Act, DoIR requires proponents to submit a document called a mining proposal for assessment and approval before mining operations can commence. Prior to the proclamation of the *Mining Amendment Act 2004* on 10 February 2006, a mining proposal was known as a notice of intent (NOI).

The Mining Act and other legislation referred to in these guidelines can be viewed on the State Law Publisher's website at: http://www.slp.wa.gov.au/Index.html

1.1 Aim of Guidelines

The guidelines aim to:

1 *Advise industry about the reasons for submitting mining proposals.* Section 2 of the guidelines provides details on mining proposals.
2 *Provide an outline of the approval process for mining proposals*. A common understanding of the approval process will allow industry and DoIR to work together to ensure that all approval and assessment requirements are addressed in a timely manner. The approval process for mining proposals is described in section 3 of the guidelines.
3 *Assist the mining industry in producing a mining proposal which meets DoIR's requirements*. A comprehensive and high quality mining proposal will enable a rapid assessment by DoIR and, in turn, minimise approval timelines. Section 4 of the guidelines outlines the structure and contents of a typical mining proposal with supplementary information supplied in the appendices.

A glossary of terms and abbreviations is provided in Appendix 1.

1.2 Guiding Principles of Responsible Development

The Government of Western Australia supports development that is consistent with the *State Sustainability Strategy* (September 2003). A copy of the strategy is available at: http://www.sustainability.dpc.wa.gov.au/. In developing mining proposal, consideration should be given to the Sustainable Development Principles developed by the International Council on Mining and Metals (ICMM). A summary of the ICMM principles is provided in Appendix 2.

2 MINING PROPOSALS

2.1 Definition of a Mining proposal

Section 70 O(1) of the Mining Act defines a mining proposal as a document that contains information about proposed mining operations in a form required by the guidelines.

For the purposes of these guidelines, a mining proposal is a document prepared by a proponent or tenement holder, containing detailed information on identification, evaluation and management of significant environmental impacts relevant to the proposed mining operations and the surrounding environment.

A mining proposal will need to meet various requirements under the Mining Act and demonstrate that the project will comply with the requirements of other relevant State and Commonwealth environmental and other legislation. A mining proposal must enable relevant government departments to make an accurate and informed assessment of the project's environmental impacts.

2.2 Requirements for Submitting Mining Proposals

A mining proposal must be submitted for written approval by the Director of the Environment Division of DoIR prior to the commencement of mining operations for the following reasons:

1. As part of the application for a mining lease.

Section 74(1)(ca) of the Mining Act requires that an application for a mining lease must be accompanied by either a **mining proposal** or a s**tatement and mineralisation report** (see Figure 1).

If the applicant lodges a m**ining proposal,** the DoIR environmental officer will assess the mining proposal and make recommendations to DoIR's Mineral and Titles Services Division (MTSD). Grant is normally supported if the mining proposal meets acceptable environmental practices and the requirements of the guidelines. Approval to commence mining may be issued by the Director of the DoIR Environment Division but will be conditional upon the tenement being granted.

Alternatively, if the applicant lodges a **statement and mineralisation report,** then the mineralisation report is assessed by officers within DoIR's Geological Survey Division who make recommendation whether or not to support the grant to MTSD.

(*Please be aware that for a grant to occur, other processes such as native title and referrals to other government departments (Departments of Water (DoW), Environment and Conservation (DEC), Planning and Infrastructure etc) and local government need to be completed successfully. MTSD administers the various consultation and referral processes associated with tenement application through to grant.)*

or

2. In accordance with tenement conditions for granted leases.

If the tenement was granted on the basis of a statement and mineralisation report, or prior the Mining Amendment Act commencing on 10 February 2006, the lease will be subject to a condition that **no mining** commences until a mining proposal has been approved by the Director of DoIR's Environment Division (section 82A(2) Mining Act).

Commencing mining operations without the written approval of the Director of the Environment Division of DoIR is a breach of tenement conditions and renders the tenement(s) liable to forfeiture under the Mining Act. Under Section 79 of the Act, the Minister for State Development may revoke the tenement or impose a fine in lieu of forfeiture.

Under other legislation, activities associated with mining operations may also attract additional penalties if the relevant approvals have not been obtained prior to commencement. For example, clearing of vegetation without the appropriate approval under the *Environmental Protection Act 1986* can result in a maximum $500,000 fine.

2.3 Mining Proposals for Low Impact Mining Operations

Low impact mining operations (LIMOs) are small scale operations that have a minimal or low impact upon the environment. The level and detail of information required to assess the environmental impact of these operations is much less than that required for a normal mining operation. To accommodate for the reduced information requirements of a LIMO, a pro forma has been produced. Examples of types of LIMOs are provided in Appendix 3.

This LIMO pro forma may not be suitable for all low impact and small scale mining operations as factors such as environmental sensitivity and the need for a clearing permit could result in more comprehensive information being required. The DoIR environmental officer for the mineral field in which the mining operation is proposed should be contacted for advice on whether the intended operation can be classified as a LIMO and whether the LIMO pro forma can be used to submit the mining proposal. In some cases, supporting documentation may be required in addition to the LIMO pro forma (e.g. vegetation survey, copies of correspondence with stakeholders, approvals from DEC for operations within DEC reserves, copies of clearing permit applications).

The LIMO pro forma is provided in Appendix 4 and is also available at:
http://www.doir.wa.gov.au/environment/EAD6667A61ED43E4896DE753CBC7F0B0.asp

The contacts for environmental officers for particular mineral fields are listed in Appendix 5 or by viewing the Environmental Regional Inspectorate Map at:
http://www.doir.wa.gov.au/environment/1B97FAF5595F4B0B888A1F70E69673FE.asp

2.4 Public Access to Mining Proposal documentation

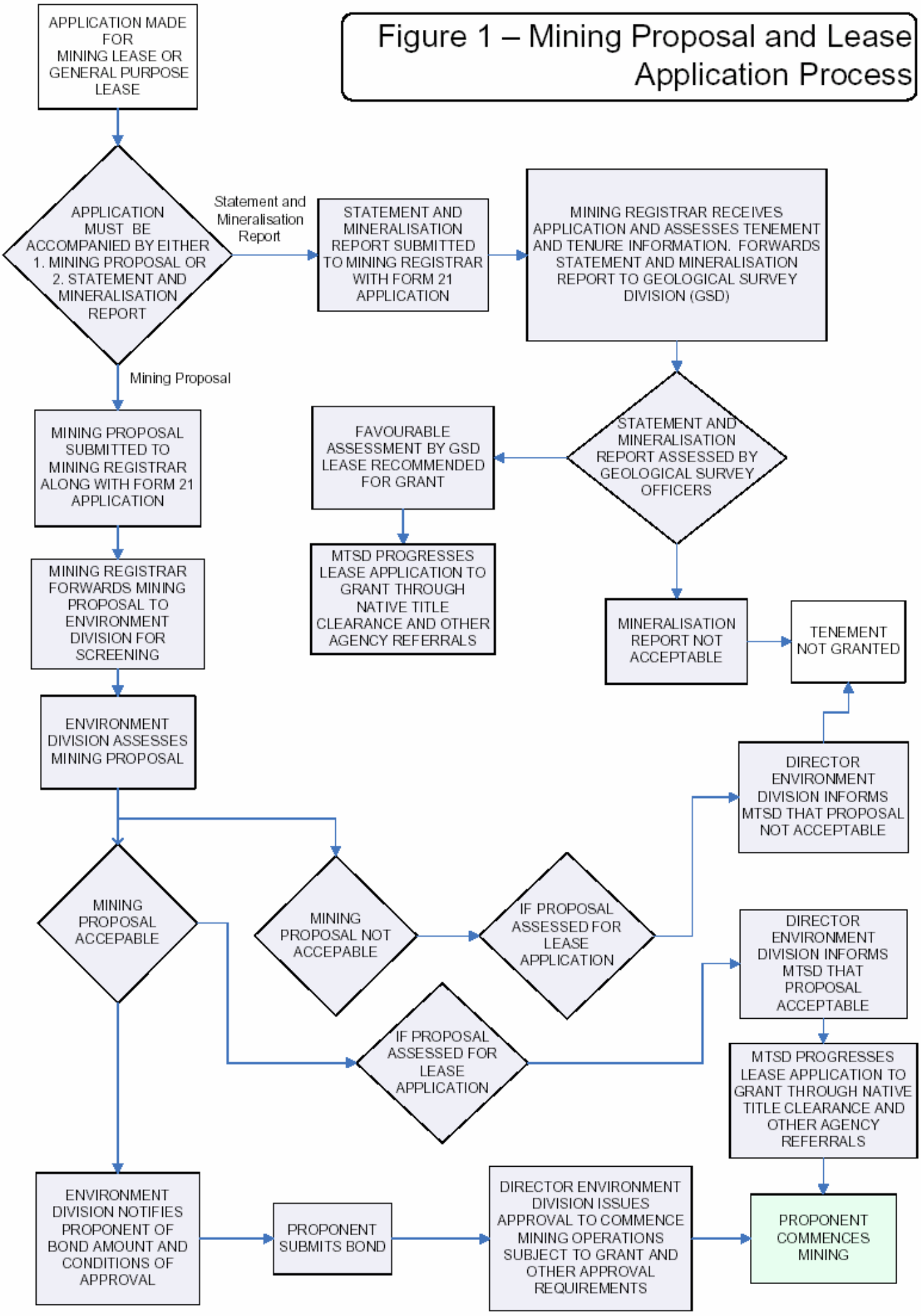
All mining proposals submitted to DoIR after the proclamation of the Mining Amendment Act on 10 February 2006 will be made available to the public via the DoIR website.

If a mining proposal contains confidential information, this information should be submitted in a separate document from the main document and clearly marked as “Confidential”. A justification for confidentiality must be provided.

See Section 3.3 for lodgement of a mining proposal document. NOIs lodged with DoIR prior to 10 February 2006 may be made available if written authorisation for access to the NOI is provided from the original owner of the NOI. Alternatively, the

NOIs may be available through the *Freedom of Information Act 1992*. Further information can be obtained form the co-ordinator of freedom of information at DoIR Perth Office, telephone (08) 9222 3554 or at:
http://www.doir.wa.gov.au/aboutus/A94C02E0BA00476F882D9AC4F65D2624.asp.

Figure 1 – Mining Proposal and Lease Application Process



3 THE ENVIRONMENTAL APPROVAL PROCESS FOR MINING PROPOSALS

3.1 Overview

There are eight generic steps in the environmental approval process for mining proposals, as follows:

1. Consultation and project scoping.
2. Preparing a mining proposal.
3. Lodging a mining proposal.
4. Screening and assessment by DoIR and referral to other agencies.
5. Recommending approval subject to further conditions.
6. Environmental bonds.
7. Mining proposal approval from DoIR.
8. Imposition of further conditions.

These steps are discussed in more detail in the sections below.

The process of gaining approval for a mining proposal involves interaction with a range of government departments and stakeholders, and is subject to agreed timelines under the State Government's integrated project approvals system.

Information on approval processes and assessment timelines relevant to resource development projects is available on DoIR website at http://www.doir.wa.gov.au/investment/0F09C656808F46B1814D12BD8AC85474.asp.

Further information can also be obtained by contacting the following project facilitation units:

- For general enquiries about mining proposals, environmental approvals, identifying potential environmental impacts and environmental management, contact the relevant DoIR environmental officers listed in Appendix 4. It is crucial that the DoIR environmental officer is consulted early in the project planning stage.
- For initial inquiries and general assistance with the co-ordination of different approvals required under the Mining Act, please contact DoIR's:
    - Manager, Mineral Projects Facilitation - phone (08) 9222 3120
- Larger or complicated projects will be assigned a DoIR project manager from the Investment Facilitation Division. For further information contact:
    - General Manager, Major Projects – phone (08) 9222 0588
    - General Manager, Operational Client Services - phone (08) 9222 0599
- Approval processes for significant, major or complex projects are co-ordinated across government agencies by the Office of Development Approvals Co-ordination (ODAC) located with Premier and Cabinet. For further information please contact:
    - Project Manager, ODAC – phone (08) 92228753 A list of other relevant government departments is provided in Appendix 5.

3.2 Consultation and Project Scoping

The consultation and scoping phase for a mining proposal is a critical step in project planning. This step requires the proponent to define the proposed mining operation in terms of:

- Location (geographic, existing land use, tenure, natural and social environment).
- Activity (type of mining and associated infrastructure).
- Scale (area of disturbance, tonnages removed, quantity and type of waste outputs).
- Requirement for approvals under other legislation.

The proponent is expected to identify and consult with key stakeholders and address all significant issues.

The proponent should begin consultation on the project as early as possible to identify the environmental issues for inclusion in the mining proposal and to allow sufficient time for improved planning and addressing relevant issues.

Based on the project definition and consultation with the relevant government and non-government agencies, the proponent should develop an environmental scoping plan for the project to determine the potential environmental impacts and required environmental approvals.

As part of this process, the proponent should determine any special timings, scope and methodology requirements for environmental investigations such as biological survey. Completion of such investigations may be critical to government's ability to adequately assess the mining proposal. Planning in advance is especially important where seasonal or prolonged periods are required to collect specific survey information, such as subterranean fauna or spring vegetation surveys.

It is recommended that multiple approvals are processed in parallel to reduce the overall timeframes for project approval.

The following examples are mining related approvals that could be processed in parallel:

- Clearing of native vegetation requiring a clearing permit under the Environmental Protection Act.
- Constructing a plant or a tailings storage requiring a Works Approval under the Environmental Protection Act.
- Commencing production and producing waste water, solids or gas requiring an Operating Licence under the Environmental Protection Act.
- Removing water from a pit or bore requires a Groundwater Abstraction Licence under the *Rights in Water and Irrigation Act 1914.*
- Any activities on reserved land requiring approval from the vested authority of that reserve.
- Projects deemed "environmentally significant" by the Environmental Protection Authority (EPA), requiring formal assessment under the Environmental Protection Act.
- Disturbance to declared rare flora requiring approval under the *Wildlife Conservation Act 1950.*
- The project management plan (PMP) for a mining operation requiring approval by the Department of Consumer and Employee Protection (DoCEP).
- The storage, handling and transportation of bulk dangerous goods requiring licensing by DoCEP.

The following reference material provides further essential information to guide definition and scoping of proposed mining operations:

- *Guide to Preparing an Environmental Scoping Document* produced by the EPA and available at: http://www.epa.wa.gov.au/docs/1919_5%20EIA%20Scoping%20Document%20Guide_1-11-04.pdf
- *Memorandum of Understanding between DoIR and EPA for Onshore Mineral Exploration and Mining Development Proposals*, see Appendix 8.
- *EPA Guidance Statement* Nos 51, 54 and 56 on terrestrial biological and subterranean fauna at: http://www.epa.wa.gov.au

3.3 Preparing a Mining Proposal

A mining proposal should be prepared in accordance with section 4 of the guidelines. It is important that mining proposals are only submitted when they contain all required information in an easily readable format to enable a complete and efficient assessment by DoIR officers. The mining proposals may not be accepted if the information is inadequate or incorrect.

A checklist is provided at Appendix 6 to help proponents ensure that their mining proposal contains all requisite information. This checklist must be completed, signed and attached to the mining proposal.

A mining proposal can be used to obtain other statutory environmental approvals but must still meet the information requirements of the guidelines. For example, a mining proposal may be submitted to support a clearing permit application or a works approval application.

Projects participating in the integrated project approvals system will be invited by ODAC to submit a project definition document (PDD) to assist with the scoping process. The PDD template and guidelines are available at: http://www.doir.wa.gov.au/documents/investment/PDD_Guideline_5_May_2005_(Final).pdf. Much of the information gathered for the PDD will also be relevant for use in the mining proposal.

3.4 Lodging a Mining proposal

Mining proposals should be submitted in both hard and electronic copy. The number of hard copies of the mining proposal that must be submitted depends on where the mining proposal is lodged.

Projects located in the Goldfields Region (as shown on the regional map referenced in Appendix 4) must submit three hard copies of the mining proposal to the DoIR Kalgoorlie regional office at the following address:

The Environmental Officer
Department of Industry and Resources
PO Box 10078
KALGOORLIE WA 6433

Projects located in the remainder of the State must submit two hard copies of the mining proposal to the DoIR Perth Office, at the following address:

The Environmental Officer
Department of Industry and Resources
100 Plain Street
EAST PERTH WA 6004

An electronic copy of the mining proposal is required if possible to facilitate the public availability of mining proposals (see section 2.4). The electronic copy must comply with DoIR's requirements for electronic submission of mining proposals, provided in Appendix 9.

If the mining proposal is being used to obtain other statutory approvals (e.g. clearing permit, works approval, DEC approval etc), additional copies of the document must be provided to relevant agencies.

3.5 Screening and Assessment by DoIR and Referral to other Agencies

Once a mining proposal has been received by DoIR, it is:

- Screened to determine whether the document meets the requirements of the guidelines (as detailed in section 4). If the document meets the guidelines requirements, then the mining proposal will be accepted for assessment. Otherwise, the document will be registered as a draft and comments returned to the proponent.
- Referred, if required, to the EPA / DEC, or other government agencies such as DoCEP or DEC, for advice on environmental aspects of the proposal and requirements for approval.
- Assessed by DoIR environmental officers. If found to be acceptable then approval conditions and environmental bonds will be determined.

If a mining proposal is likely to have a significant impact on the environment it must be referred to the EPA as required under Part IV of the Environmental Protection Act. The Memorandum of Understanding (MOU) between DoIR and the EPA (see Appendix 8) provides a list of triggers to assist DoIR in determining when a mining proposal needs referral to the EPA. If the EPA requires a formal Environmental Impact Assessment (EIA), approval under the Environmental Protection Act may take from six to 18 months. More information on the EIA process is provided in Appendix 7 and is described in the EPA publication Administrative Procedures 2002 available at: http://www.epa.wa.gov.au.

If statutory approvals are required from other agencies, proponents should provide evidence of these approvals in the mining proposal. Given the time required to gain environmental approvals from other agencies, it is recommended that, where possible, these approvals are identified and obtained prior to lodging your mining proposal with DoIR.

3.6 Recommending Approval Subject to Further Conditions

Following a favourable assessment of a mining proposal, DoIR will advise the proponent in writing that the mining proposal will be recommended for approval by the Director of DoIR's Environment Division, subject to a schedule of recommended further conditions and any outstanding approvals from other agencies. These further conditions are additional to the schedule of conditions applied to the tenement when it was granted. The recommendation for approval is **not** an approval but provides the proponent with 30 days to comment on the proposed recommended conditions.

3.7 Environmental Bonds

Almost all mining proposals involving ground disturbance will require the tenement holder(s) to submit environmental bonds prior to approval. Bonds are calculated according to the type and area (in hectares) of disturbance proposed on each tenement.

The requirement to lodge an environmental bond is one of the further conditions applied to the tenement following assessment of the mining proposal. Approval to commence mining will not be issued until the correct bonds are lodged. The bond request will remain valid for a period of 12 months from the date of notification. The mining proposal will be withdrawn if the bond, or a valid reason for non lodgement, is not received within this timeframe.

Bonds are legally binding agreements provided by the tenement holder, or a financial institution on behalf of the tenement holder, which gives the State recourse to monetary funds if the tenement holder fails to meet agreed environmental commitments. Further information on environmental bonds is provided Appendix 10 or at:
http://www.doir.wa.gov.au/environment/D3EDAEF4AF5444B387556F666CCF00A4.asp.

3.8 Mining Proposal Approval from DoIR

Approval of a mining proposal under the Mining Act requires the Director of DoIR's Environment Division to issue a signed approval letter to the proponent and tenement holder. Mining activities must not under any circumstances commence without the approval letter from the Director.

The Director's approval under the Mining Act

- May not be issued if environmental approvals are under other statutory control such as section 41 of the Environmental Protection Act.
- Does not remove the proponent's responsibility to obtain all other relevant government approvals, including other approvals issued by the Director of DoIR's Environment Division, such as clearing permits.
- Does not provide authority for non-mining activities that may be included in the mining proposal, such as commercial tyre disposal operations to backfill mine pits.

Prior to the proclamation of the Mining Amendment Act on 10 February 2006, the State Mining Engineer issued the approval for NOIs and mining commencement. DoIR's Director of the Environment Division has now replaced the State Mining Engineer as the signing authority for approval for both new mining proposals and for older mining tenements even where the tenement condition refers to the State Mining Engineer.

3.9 Imposition of Further Conditions

Following approval of the mining proposal, the Mineral Title Services Division (MTSD) of DoIR imposes the recommended further conditions on the affected tenements. The conditions are imposed under sections 46A, 63AA, 84 and 89 of the Mining Act for prospecting licences, miscellaneous licences, exploration licences, mining leases and general purpose leases respectively, under delegation from the Minister for State Development.

Once the tenement conditions are imposed, MTSD updates the tenement register. The tenement register is a public document that can be viewed online using Mineral Titles Online (MTO). Registration for MTO is available at http://www.doir.wa.gov.au/mineralsandpetroleum/210E08722A054021BBBF6010E706F8A6.asp.

Any environmental commitment made in the mining proposal becomes a legally binding obligation once the mining proposal is imposed as a tenement condition through section 84 of the Mining Act. It is important that the lessee and proponent are aware that the environmental commitments remain in force until such time as the commitment is complied with. Under section 114B of the Mining Act, the expiry, surrender or forfeiture of a mining tenement does not affect the liability of the tenement holder in regard to rehabilitation obligations.

The further conditions are recommended to ensure that the approved mining operations are conducted in an environmentally acceptable and responsible manner. These conditions may include:

- Mining proposal documentation and variations: The approval of all mining proposals will be subject to a condition which states that activities on the tenement must be conducted as per the mining proposal. An additional condition states that that any activities beyond those described in the approved mining proposal require separate approval.
- Annual Environmental Report (AER): The approval of all mining proposals will also be subject to a condition that the proponent submits an AER detailing the activities conducted in the previous 12 months and the activities proposed in the following 12 months. Guidelines for the preparation of an AER are available on DoIR's website: http://www.doir.wa.gov.au/environment/D3EDAEF4AF5444B387556F666CCF00A4.asp.

4 CONTENTS AND FORMAT OF A MINING PROPOSAL

This section describes the contents and formats for a typical mining proposal. The actual structure of the mining proposal will be determined by the information requirements specific to each project and especially the significance of environmental factors requiring assessment and management.

It is essential that advice is sought from the DoIR Minerals Environment Branch at the earliest stage to ensure that the mining proposal meets the necessary environmental management standards and contains the level of information required for assessment by DoIR. Depending upon the complexities of the proposal, proponents may also request assistance from ODAC or DoIR's Mineral Projects Facilitation Unit, as mentioned in section 3.

4.1 Structure of Mining Proposal

The structure for a typical mining proposal is given below and may be modified to suit project specifics and environmental requirements.

4.1.1 Title Page

Include:

- The mine site name and a general description for the proposed activities
- Mining tenements or mining tenement applications
- Proponent's name
- Date

4.1.2 Checklist

- A completed mining proposal checklist with corporate endorsement must be placed after the title page (see Appendix 6).

4.1.3 Summary and Commitments

Provide:

- A summary of the project description, potential environmental impacts and proposed management of these impacts.
- A statement to indicate that discussions about the project have been undertaken with the local shire, pastoralist, land holder and any other relevant stakeholders, noting the relevant issues raised and proposed resolutions or outcomes from consultation or negotiations.
- A consolidated list of environmental management and rehabilitation commitments.

4.2 Background Information

4.2.1 Ownership

- List the relevant mining tenements or tenement applications with tenement ownership details. Include the status and structure of any joint venture arrangements.
- If a tenement is not held by the proponent, the mining proposal must contain written authorisation from the tenement holder that the proposed work is acceptable to the holder. Refer to section 118A of the Mining Act for third party mining authorisation. Any conditions attached to the mining authorisation should also be mentioned.
- Include the name, address and contact of the tenement holder(s), management companies and contracting companies. Both mine site and main office contacts should be provided.

4.2.2 Project Objectives

- Give a brief summary of the type of operation including size and scale, both in areas impacted and tonnages mined and processed (plant throughput). The impact on regional economics should also be discussed for larger projects.
- Provide an outline of critical project dates for commencement / completion.

4.2.3 Location and Site Layout Plans

Provide location maps at appropriate scale that clearly show:

- Location in Western Australia in relation to nearest major centres, towns, other mines and regional infrastructure.

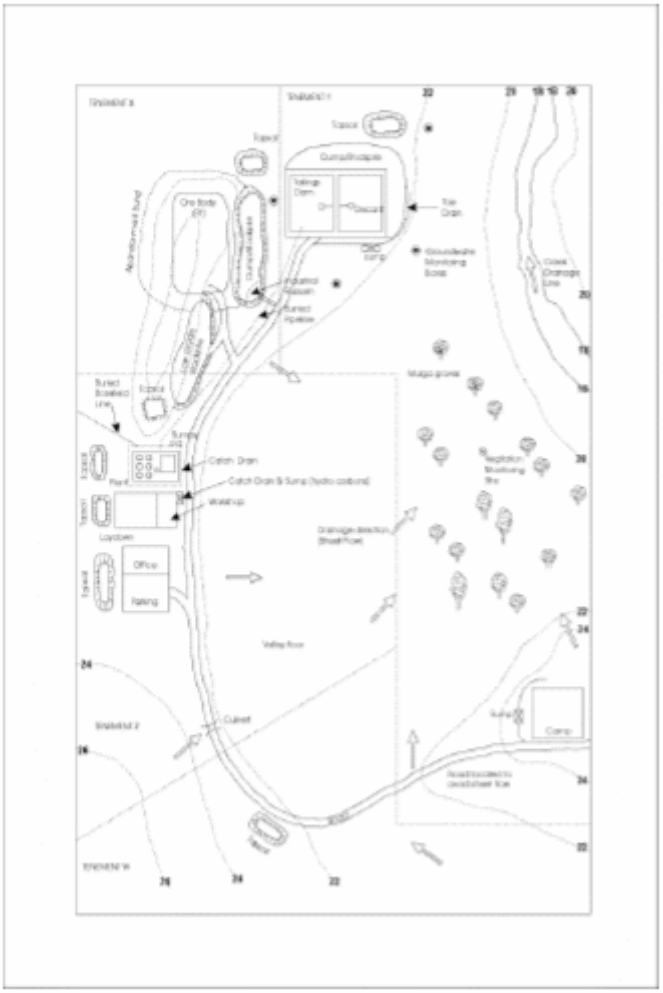
- Tenement boundaries in relation to all aspects of the proposed mining operation, including waste dumps, tailings storage, accommodation, haulage routes and other proposed disturbances.
- Other land tenure including reserves and pastoral lease boundaries.
- Biogeographical zones and relevant natural features.

Provide detailed site plans that clearly show:

- Surface layout of the entire mining project, including all infrastructure. It is essential that tenement boundaries are clearly marked and labelled on plans (see the example at Figure 2).
- Vegetation communities, landform types and other relevant natural features such as salt lakes. Include any environmental constraints such as rare plant populations, fauna issues and Aboriginal sites.
- Surface contours at an appropriate interval showing major topographic features including surface hydrology - rivers, creeks, lakes and drainage lines.
- Haulage routes for satellite pits and road / rail transport routes.
- An aerial photograph should be provided to underlay the layout plan.
- Geological plans required in section 4.3.2.

Other site specific information such as pastoral infrastructure (dams, windmills etc) should be included where relevant.

FIGURE 2 EXAMPLE OF A CONCEPTUAL SITE PLAN FOR A MINING PROPOSAL



4.2.4 History

Describe any previous exploration, mining activity or other land disturbing activities in the area, including any that may have environmental contamination.

If there has been substantial disturbance from previous mining, photographs and maps to document the extent of this disturbance should be included to help define the rehabilitation liability of the current tenement holders.

4.2.5 Existing Facilities

Briefly describe any existing facilities and infrastructure currently on site and the planned use of nearby facilities, including the use of public roads, water and power.

If the tenements contain un-rehabilitated disturbances from previous mining that are not part of the new proposal, the proponent is encouraged to investigate incorporating the rehabilitation of these older disturbances into the rehabilitation of their mining operations. Historical mining disturbances of significant heritage value should be preserved in consultation with the Heritage Council (see section 4.6.1).

4.3 Existing Environment

4.3.1 Regional Setting

Provide a general description of geology/geomorphology and local landforms, including a description of land units.

4.3.2 Geology

Provide a brief description of geology specific to the area of interest, including a basic description of the mineralisation. A resource statement must be provided with the following information:

- Mineral(s) to be mined.
- Tonnage(s) and grade(s) of resource(s) to be mined.
- Cut-off grades if applicable.
- Resource status (reserve/ resource) and category (proven, probable/measured, indicated, inferred – all as separate figures).
- Whether the resource estimates have been prepared in accordance with the JORC code (see list of terms in Appendix 1).
- Plan showing the outline of the deposit(s) (projected to the surface) and the boundary of the tenement or tenement application.
- Reference to the annual mineral exploration report(s) containing details of the resource estimate(s).

It is understood that all of the above information may not be available for some minerals, such as construction materials and industrial minerals.

4.3.2 Characterisation of Waste Rock and Tailings

It is essential that the potential of acid mine drainage (AMD), otherwise known as acid rock drainage (ARD), be determined and, if significant, management strategies put in place to deal with potentially acid forming (PAF) material in waste rock dumps and tailings storages.

To deal with AMD issues, the mining proposal should include:

- A summary of the characterisation of the mining wastes and tailings including chemical and physical characteristics such as sodicity, salinity and dispersive potential.
- An assessment of the potential for sulphide oxidation leading to acid generation including specific AMD chemical analyses (pH, Total Sulphur, Net Acid Producing Potential (NAPP), Net Acid Generation (NAG), Acid Neutralising Capacity (ANC)), multi-element composition and mineralogy of mine waste and tailings samples.
- The full waste characterisation report must be included as an appendix in the mining proposal with details on the methodologies used for the above determinations.
- A map showing the intended final locations of PAF material.
- If significant PAF material is present, then a PAF material management plan (including remediation techniques and monitoring program) should provided as part of section 4.4.2 - Mining Operations.

4.3.3 Soils and Soil Profiles

Topsoil and subsoil layers should be analysed to identify possible adverse parameters such as low or high pH, high salinity, nutrient / trace element deficiencies, poorly structured soils, dispersive or sodic soils and any potentially hazardous compounds. It is recommended that field trials are conducted to test soils for germination and plant growth characteristics as part of the development of suitable soil management plans. The results will assist in determining the depth of soil profile for harvesting and whether subsoil should be removed as well.

Where the site has been subject to previous activity (particularly industrial activity or mineral processing) there may be a need to contact the DEC about any requirement for investigation of possible contamination.

A summary of the results of topsoil and subsoil physical and chemical characterisation tests by a registered laboratory should be included. Minimum tests include pH, salinity, particle size distribution, dispersion (slake), total P, total N, P04 and NO3. Others worth considering include C:N ratio, Cu, Zn, Pb, Fe and any other nutrients or metals which may be important in ensuring successful rehabilitation.

The full soil report and analyses should be included as an appendix in the mining proposal with details on the methodologies used.

4.3.4 Hydrology

Provide:

- A brief description of surface and subsurface water flows with assessment for flood potential if applicable. Flood assessment should be conducted in accordance with DoW methodologies. (See DoW information in Appendix 7).
- Provide details of any water management areas such as water reserves, declared or proposed water supply catchment areas or groundwater protection areas, in or near the project area.
- Provide information about nearby water bodies, wetlands or groundwater dependent ecosystems that may be directly or indirectly affected by changes in hydrology.
- Provide a certified copy of groundwater quality analysis from a registered laboratory detailing salinity levels (mg/L), TDS, TSS and pH.

4.3.5 Climate

The mining proposal should contain meteorological information necessary to adequately assess and manage all climatic impacts that could have significant impact on the project. Minimum drainage design should be based on at least the one in 100 year, 72 hour duration rainfall event. In many situations it may be appropriate to undertake independent risk assessment to check whether the official one in 100 year event provides sufficient protection for drainage designs.

4.3.6 Flora and Fauna

Provide a description of vegetation types and biological communities in the mining proposal locality using previously published flora / fauna surveys or studies (these surveys or studies should be appended to the mining proposal).

DEC provides fee-for-service data from various databases to enable a desktop study for listed threatened or priority flora, fauna and ecological communities. The desktop study is essential in determining the likelihood of such flora, fauna or communities being found within or adjacent to a mining proposal. DEC may also have other biodiversity information available and can advise on specific and local issues that may be of relevance to the mining proposal (see DEC information in Appendix 7).

In many cases a flora and fauna survey will be required for inclusion in the mining proposal. Flora and fauna surveys must be conducted by suitably qualified and experienced personnel. Vegetation descriptions should be according to accepted / published structural classes such as Muir for the Wheatbelt, Keighery for the South West or Specht for forests. A detailed report on the survey is required containing, but not limited to, the following information:

- Consultant's qualifications, experience and affiliations.
- Methodologies used and acceptability of the methodology to DEC.
- Seasonal timing of survey and justification for particular timing (e.g. spring surveys are preferable, or after significant rainfall for desert areas).
- Results of surveys with species lists of the all species, including rare and endangered species (consultants should lodge specimens with the WA Herbarium).
- Relevance of local and regional significance of survey findings.
- Any relevant correspondence/communication with DEC, including results of database searches.
- An impact table indicating threatened, rare, priority or geographically restricted species, their habitats and known distribution at a local and regional scale. Where such species are identified, geographic co-ordinates of new populations should be provided. The impact table should show areas and/or numbers of individuals of these significant species that will be directly impacted or indirectly affected by the proposal as well as populations and / or individuals outside the zone of mining influence.
- A summary of the survey results should be included with the full report appended to the mining proposal.
- In general, flora and fauna surveys should be undertaken in accordance with the EPA's Guidance Statements on terrestrial biological surveys (EPA Guidance Statement Nos 51 and 56). There are also likely to be specific requirements for surveys affecting lands managed by DEC or containing populations of threatened flora or fauna. DEC should be consulted to further discuss these issues

If the project involves clearing of native vegetation, a flora survey may be required as well as a vegetation clearing permit (see Appendix 7). The information gathered for the clearing permit application can also be used or referenced for this section.

4.3.7 Social Environment

Describe relevant historical and current elements of the social environment of the area, including:

- Items or sites of State, National or Aboriginal heritage – provide evidence of a registered site search on the Department of Indigenous Affair's (DIA) website: http://www.dia.wa.gov.au/Heritage/heritage_Sites_Register.aspx
- Existing land ownership and land use such as tourism, recreation, farming, pastoral leases, reserve land, town sites and local Aboriginal communities.

4.4 Project Description

4.4.1 Area of Disturbance Table

The performance bonds required for lodgement with DoIR prior to approval will be calculated on the basis of the project's area of disturbance. Bonds are lodged against each tenement where the proposed mining operations involve ground disturbance.

- Complete the table below for each affected tenement.
- It is essential that each of the disturbance types listed in the table are clearly displayed on the site layout plans mentioned in section 4.2.3.
- Suggested headings are provided for typical mine site disturbances although it is recommended that headings are customised to suit the mining disturbance types specific and appropriate to the site.
- It is essential that all areas within the tenement are accounted for, such that the total areas of ground affected by mining or the mining proposal and undisturbed areas add up to the total area of the particular mining tenement.
- For long term projects where mining will be in stages, bonds may be calculated on the disturbance predicted across the first five years of development.

TENEMENT NUMBER:	
DESCRIPTION Of MINING DISTURBANCES	**AREA (ha)**
Open Pit	
Tailings facilities	
Heap leach pads or vat leach dams	
Evaporation ponds	
Waste dumps (sulphide present, highly erodable, > 25 m high)	
Waste dumps (lower risk)	
ROM pad	
Low grade oxide stockpiles	
Plant site and mining infrastructure including office / workshops	
Camp site	
Strip mining (backfilled mining voids)	
Hypersaline pipeline corridors) (>15,000TDS)	
Fresh water pipeline corridors (<15,000TDS)	
Haul roads	
Access tracks	
Hardstand areas	
Borrow pits	
Historical and areas mined by previous operators	
Exploration (where clearing takes place)	
Other (specify)	
Other (specify)	
Other (specify)	
Undisturbed Land	
TOTAL (should equal tenement area)	
TENEMENT AREA	

If the mining proposal is for an additional development to an existing mine then add another column for "New Area" and change the existing area column to "Previous Area" (see below).

TENEMENT NUMBER:		
DESCRIPTION Of MINING DISTURBANCES	**PREVIOUS APPROVED AREA (ha)**	**NEW PROPOSED AREA (ha)**
Open pit		
Tailings facilities		
Heap leach pads or vat leach dams		
Evaporation ponds		
Undisturbed land		
TOTAL (should equal tenement area)		
TENEMENT AREA		

4.4.2 Mining Operations

Describe both long term conceptual plans as well as detailed plans for the first few years of operation. The description should include, but not be limited to:

- Overview of proposed mining operations.
- Duration of mining and relevant timelines.
- Method of operation, mining techniques and plant and equipment.
- Tonnages of material mined, ore produced and waste rock generated. Mention pit design and the proximity of pits to waste dumps.
- Management of waste rock - backfilling or waste dump design and location. If applicable, mention PAF material management strategies such as encapsulation and store and release structures. Cross section designs of dumps and batter design should be included.
- De-watering requirements, see Appendix 7.4.5.

4.4.3 Ore Processing

- Provide a description of ore treatment and processing activities with a flow diagram.
- Describe the waste streams, tailings, effluents and emissions produced as a result of processing activities.
- Confirm whether a works approval is required from the DEC and if so, provide status update on application.

4.4.4 Tailings Storage

If a tailings storage facility is proposed, the information provided must be consistent with DoIR's guidelines on tailings storage design and operation, available at:
http://www.doir.wa.gov.au/environment/D3EDAEF4AF5444B387556F666CCF00A4.asp

Include a description of:

- Size and location of the tailings facilities.
- Construction methods.
- Source of construction material.
- Management of tailings process lines.
- Geochemical and geophysical characterisation of the tailings material.

The DoCEP geotechnical engineers can provide geotechnical advice for the construction of tailings storage facilities as well as water dams, pits and waste dumps (see information for DoCEP in Appendix 7).

If the geotechnical design is approved by DoCEP, the operator will be required to submit an operating manual for the tailings storage to DoCEP, available at
http://www.docep.wa.gov.au/resourcessafety/Sections/Mining_Safety/pdf_/MS%20GMP/Guidelines/MS_GMP_Guide_tailingsmanual.pdf

A works approval and licence to operate a tailings facility will be required from the DEC.

4.4.5 Support Facilities

Briefly describe proposed buildings and mining infrastructure such as offices, magazines, workshops, effluent systems, camps and accommodation villages. If located within townsite boundaries, buildings and infrastructure may require approval from local authorities. A works approval from DEC will be required for prescribed premises under Part V of the Environmental Protection Act (e.g. sewerage treatment plants) (see Appendix 7).

4.4.6 Workforce

Outline workforce structure, including numbers of staff and contractors, where the workforce will be sourced (fly-in-fly-out, drive-in-drive-out or local residents) and the commute arrangements for non–local workforce personnel.

Please note that current government policy encourages the sourcing and accommodation of workers, as far as practicable, in the nearest established township or regional centre.

4.4.7 Transportation Corridors

Describe all transportation corridors, including:

- Ore haulage routes, including length, width, method of construction and source of construction material.
- Off site road transport and / or rail routes.
- Port and shipping arrangements.
- Overland powerline and pipeline routes (water, gas and slurry).

The use of public or private roads may require a permit from the commissioner of Main Roads and / or approval from the local authorities.

4.4.8 Resource Requirements and Regional Infrastructure

Provide details of regional resource requirements such as:

- Water usage – annual volumes required and availability.
- Energy usage – diesel / natural gas / electricity.
- Road developments.
- Workforce requirements.
- Special requirements or infrastructure.

Describe any agreements or projects being undertaken in conjunction with local or State government in relation to any of the above points.

4.4.9 Compliance with Legislation and Other Approvals

Other approvals required under tenement conditions or other legislation should be identified and listed in this section. A compliance checklist matrix is recommended for inclusion in the mining proposal.

For tenement conditions:

- Verify that the conditions of each tenement have been reviewed and any significant requirements addressed.
- Provide evidence that conditions requiring additional consent have been complied with, such as ministerial consent to mine within some types of reserved land.

For other legislation:

- Provide a list of the environmental approvals required under other legislation with an update on the approval progress of pending applications. Append evidence of issued approvals.
- Provide a list of the significant non-environmental approvals required under other legislation with an update on the approval progress. An example is the project management plan required from DoCEP.

As discussed in section 3.1, to avoid delays in the mining proposal approval process, the need for simultaneous management of required approvals is emphasised.

4.5 Environmental Impacts and Management

The management of environmental impacts is the key factor in developing an acceptable mining proposal and expediting approval timelines. The two main objectives of environmental management within the mining proposal are:

1. To identify all likely environmental impacts arising from the mining proposal and to determine significant impacts requiring the implementation of special management procedures.
2. To develop and declare the environmental management commitments necessary to minimise, control, ameliorate and rehabilitate significant impacts. The commitments then become part of the company's annual environmental reporting program once the project has received DoIR approval.

At the end of this section, the mining proposal should contain a table to summarise the impacts identified and the management commitments (see example below). This table can also be included in the AER.

Environmental Impact (in order of significance)	Management Commitment Implementation	Timelines	Performance to date (to be filled in at AER stage)

4.5.1 Land Clearing

The impacts of land clearing and vegetation removal on soil erosion, salinity and hydrology should be assessed and described in accordance with the 10 clearing principles (see Appendix 7).

The impact of vegetation clearing should be assessed at both the local and regional level.

Land management and drainage strategies should be considered along with factors like the cleared area's shape and landform profile, water control, soil stability, weeds and pests and adjacent land uses.

4.5.2 Water

Describe all potential impacts of mining activities on the groundwater and surface water systems.

The impact of flooding on the mining site, if applicable, should also be addressed. To assist with the assessment of flood impact, a contour plan encompassing the area of operations and up to a minimum distance of 500 metres around the operation should be submitted. This contour plan should have a maximum contour interval of five metres with a two metre interval preferred.

Any potential impacts of any hydrological changes on vegetation, habitat or aquatic ecosystems should also be discussed. For example, the construction of haul roads or diversion channels may interrupt surface water flows and adversely impact downstream vegetation such as in mulga communities. Road construction details are required to show how environmental effects will be minimised, especially where roads cross watercourses or where the location of the road may affect surface sheet flow (overland) systems.

The development and extraction of groundwater or surface waters will require approval and licensing from DoW (see Appendix 7). Similar licensing may be required for mine dewatering programs. Mine de-watering requirements must be provided with details on water quality, predicted volumes, discharge points and likely impacts on regional drainage (see Appendix 7). Details of water abstraction or de-watering licences or applications must be provided in the mining proposal.

4.5.3 Flora, Fauna and Ecosystem

Describe the proposed management and impact minimisation strategies for any restricted, rare or threatened species, ecological communities and ecosystems occurring within the proposed mining proposal footprint. DEC will need to be consulted in regard to the management strategies and this should be detailed in the mining proposal.

4.5.4 Topsoil and Soil Profiles

The effective and appropriate re-use of topsoil and other material such as subsoil is essential in achieving a successful and timely rehabilitation outcome. Topsoil should be viewed as a strategic resource that, if properly salvaged, preserved and respread, can significantly reduce revegetation timeframes and hence expedite bond returns. A topsoil management plan must be submitted within the mining proposal and should outline:

- Topsoil and subsoil characteristics in relation to plant growth.
- Harvestable topsoil and subsoil volumes, stockpile dimensions and location on mine site plans.
- Estimated volumes (with profile distributions) of topsoils and other subsoil materials required for closure rehabilitation and decommissioning.
- Redeployment objectives and timeframes. Direct topsoil return is recommended wherever possible.

- Harvest and preservation methodologies (isolation from mining operations, fencing and signage, biological longevity, contamination minimisation and weed control etc).
- Proposed field trials (re-spreading depth, ripping or scarification treatments, nutrient requirements, substrate structural requirements to bed in topsoil and minimise rilling etc.). These trials should commence as soon as practicable.

It is recommended that topsoil and subsoil analysis is undertaken in conjunction with growth trials to ensure that redeployed soils and recreated soil profiles supports germination and plant growth (some soils when respread may inhibit germination). If topsoil is unsuitable then alternative materials such as subsoil lateritic material should be assessed as a topsoil replacement.

4.5.5 Domestic and Industrial Waste Products

Describe the management of all domestic and industrial wastes including hydrocarbons. Any recycling, waste minimisation or stewardship initiatives should be included.

4.5.6 Waste Rock and Tailings Management

The mining proposal should clearly outline methods to manage and rehabilitate waste rock and tailings. Management strategies should be based on material characteristics, encapsulation of hostile materials, designing long term stability, visual amenity (aesthetic revegetated landforms) and the integration of final outcomes (closure planning) into daily mining operations. Provide cross section diagrams showing final design concepts.

4.5.7 Hydrocarbon Management

Provide details on all aspects of hydrocarbon management across the entire site. Particular reference must be made to diesel spillage containment and leakage detection systems at vehicle refuelling bays. All underground hydrocarbon pipelines must be clearly marked on site plans with rupture and / or leakage detection systems described.

4.5.8 Dangerous Goods and Hazardous Substances

Describe the storage, transportation and handling of all dangerous goods and other hazardous substances (including radioactive materials and hazardous waste). Details should include reference to any related government approvals such as those required under the *Explosives and Dangerous Goods Act 1961*.

The *Contaminated Sites Act 2003* is likely to come into effect during mid 2006. Under the Contaminated Sites Act legislation, it is mandatory to report known or suspected contaminated sites. Pre-existing contaminated sites or proposed contaminated sites should be described in the mining proposal and located on the site layout plan. Failure to report a contaminated site risks maximum fines of $250 000 for an individual or $1.25 million for a company.

The DEC Contaminated Sites Committee may require site remediation for uncontrolled and potentially dangerous contaminated sites. Further information can be found at:
http://portal.environment.wa.gov.au/pls/portal/url/ITEM/DE8462AD7CAC0CEDE03010AC6E054A96

4.5.9 Atmospheric Pollution and Noise

Describe potential sources of dust, fumes or gases and proposed control methods for all phases of the operation. Include details of any licences required, emission standards to be met and the company's proposed methods of measuring these discharges.

Describe the potential and predicted impacts from the mining proposal in relation to the emission of noise and dust on environmental values including flora, fauna, human health and amenity.

Outline noise control procedures for the various aspects of the project. Occupational noise levels and community or environmental levels should be stated. Proponents should be aware of the *Environmental Protection (Noise) Regulations 1997* under the Environmental Protection Act, and include statement that the operation will comply with these regulations, as applicable.

4.6 Social Impacts

4.6.1 Heritage

Proponents need to be aware that their proposed operation may impact upon a place listed in a town planning scheme, or a place or object of heritage significance within the meaning of *Aboriginal Heritage Act 1972*, the *Heritage of Western Australia Act 1990*, the *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*. If the proposal may impact on any of these, the mining proposal should include information on the place or object and the arrangements put in place with the relevant government agency to deal with the impacts.

Refer to the Heritage Council of Western Australia guidelines for historical mining areas:
http://www.doir.wa.gov.au/documents/environment/Shed_env_guide_ConserveHeritage.pdf

4.6.2 Land Use and Community

The mining proposal should detail the impact on other land occupiers in the vicinity of the mining proposal, such as pastoralists, Shires, owners of reserves (DEC), private land owners, local community members, recreational groups and Aboriginal communities. Any agreements reached with important stakeholders should be acknowledged and copies included in the mining proposal. Adequate time needs to be provided for community consultation. Issues of cultural sensitivity should be handled carefully and thoughtfully. DoIR has produced two documents which provide practical guidance for companies interacting with Aboriginal communities.

- *Guidelines for Consultation with Indigenous People*, available at http://www.doir.wa.gov.au/documents/mineralsandpetroleum/ConsultationGuidelines.pdf
- *Working with Aboriginal Communities: A Practical Approach (2001),* available at http://www.doir.wa.gov.au/documents/mineralsandpetroleum/WorkingWithAbComs2.pdf

Information regarding mining and pastoral interactions is provided in Information Series Pamphlet No 5, available at: http://www.doir.wa.gov.au/documents/mineralsandpetroleum/info5.pdf

The mining proposal must contain a summary of the stakeholders that have been consulted and the outcomes of consultation (issues, resolutions etc). In some cases, a copy of the mining proposal should be provided to appropriate stakeholders.

In the case of local government, DoIR requires that the proponent provides notification and a copy of the mining proposal to the local authority prior to project commencement. Local government may then seek to have any concerns addressed or issues resolved by:

- Approaching the proponent and DoIR (using DoIR's land access officers) to seek resolution, clarification and agreement on outstanding issues.
- If not already referred to the EPA, referring the mining proposal to the EPA under section 38 of the Environmental Protection Act.

4.6.3 Social Environment

Highlight the positive and negative social impacts of the mining proposal from a regional, State and local government perspective.

4.6.4 Workforce induction and training

The mining proposal should detail any workforce environmental induction and training requirements necessary to ensure that personnel are aware of, and are competent in, meeting all company environmental management commitments. It is recommended that competency training for both operators and supervisors is undertaken prior to the commencement of any major environmental or rehabilitation programmes.

4.7 Mine Closure

An essential element of the mining proposal is planning for mine closure. A preliminary mine closure plan must be submitted with the mining proposal, preferably as an appendix with the main aspects and summary of the closure plan included in this section of the mining proposal (see section 4.7.3).

To ensure a successful and cost-effective mine closure, it is essential to commence closure planning at the initial planning stages. Pre-mining planning should take into consideration the proposed post mining land use and the implementation of effective operational methodologies to achieve the final landform.

It is crucial that closure planning is based upon the results of extensive field evaluations and trials to ensure that chosen rehabilitation methods are effective, durable and achievable. In most cases, appropriate methodologies may take years to develop and may be markedly different to the initial concepts. Hence the need for the planning of closure from initial stages.

It is vital that mine planners ensure that material required for closure (eg. capping rock and topsoil) is segregated from the normal waste rock streams and stockpiled separately, preferably in close proximity to where it will be used. If this material is mismanaged then closure becomes significantly more difficult and expensive, thus highlighting the need to not only plan ahead but also implement good planning within the mining operations.

4.7.1 Post Mining Land Use

Post mining land use options should be discussed with relevant stakeholders and a conceptual plan developed into a mine closure plan. The mine closure plan should be reviewed annually, or at appropriate intervals, in response to continual improvement or best practice and any changes relayed to mining operational levels and relevant stakeholders.

Rehabilitation, if to approximate natural conditions, may require advice and approvals from DEC for special issues such as habitat reconstruction, weed control, species diversity and selection (using provenance seed collection). Where the proposed objective of rehabilitation is not to a pre-mining natural condition, the alternative landform must be described with a rationale to justify this landform.

4.7.2 Rehabilitation

For each site a specific set of completion criteria needs to be developed to determine whether the rehabilitation end point has been reached. Where possible, the completion criteria chosen should be developed from actual rehabilitation trials and site experience rather than arbitrary baseline studies conducted on analogue (local pristine) sites that may have little edaphic or physical / chemical similarity to mine soils. However, in many cases the attainment of an approximate natural ecosystem similar to those occurring locally is a preferred and worthwhile objective.

The development of an acceptable rehabilitation endpoint may take a number of years and in some cases the endpoint will be modified to suit the achievable outcomes. Some sites may need an initial rehabilitation programme and then environmental augmentation programmes over a number of years to attain the desired outcome. The efforts to develop successful rehabilitation criteria and outcomes should be documented in the AER. In some case the updated mine closure plan can be included in the AER.

The mining proposal should contain an outline of the rehabilitation procedures for each project component (i.e. for waste dumps, tailings disposal facilities, plant site and other disturbed areas). Diagrams and construction cross section drawings of final landforms should be provided. Methods for recording and reporting progressive rehabilitation details should be given in the AER.

It is recommended that a commitment is made in the mining proposal to commence rehabilitation field trials as soon as possible to develop and validate the proposed rehabilitation methodologies for closure. These trials will also help develop the operation competency of the workforce in achieving high quality rehabilitation works.

It is important that the source and qualities and quantities of materials anticipated for rehabilitation are confirmed in the mining proposal (eg rock capping for tailings facility). The mining proposal may not be approved if the materials required to stabilise and rehabilitate a high risk structure (such as an ARD cell within a waste dump or potentially hazardous tailings storage) are unavailable locally or have not been scheduled for segregation within mining operations procedures.

4.7.3 Strategic Framework for Mine Closure

The Australian and New Zealand Minerals and Energy Council (ANZMEC) and the Minerals Council of Australia have developed a strategic framework for mine closure, available at:
http://www.doir.wa.gov.au/documents/environment/Shed_env_guide_closure.pdf

A summary of the principles and objectives of the framework is provided in Appendix 11. It is recommended that the ANZMEC strategic framework is used managing mine closure and decommissioning.

4.7.4 Submission of Mine Closure Plan Documents

The mine closure plan is a living document that should be updated throughout the life of the mining operations and particularly at the following stages:

1. Mining proposal – preliminary planning for commencement and operational aspects and closure.
2. AER – operational and incidental aspects, undertaking progressive rehabilitation and continued development and updating of closure plans.
3. Mine closure and decommissioning – final planning for closure and implementation of decommissioning and final rehabilitation. This is to be submitted prior to the end of the project at a time to be determined by the relevant DoIR environmental officer and will depend on the duration of the operation.

The DoIR environmental officer should be consulted throughout all three stages to ensure that decommissioning rehabilitation objectives are being met and this will in turn assist to facilitate bond return.

4.8 Bibliography

Mining proposals are to contain a complete bibliography of all references cited.

4.9 Appendices

Appendices should contain technical data, other approvals, results of surveys (soils, water, flora, fauna, Aboriginal matters), and relevant correspondence with other stakeholders such as the shire, pastoralist, DEC and other decision making authorities.

5 REFERENCE MATERIAL

5.1 References

- AS/NZS ISO 14001:1996 *Environmental management systems. Specification with guidance for use*.
- AS/NZS ISO 9000 *Quality management and quality assurance standards*.
- DoIR (WA) (1991) *Information Series No. 9: Guidelines for Management of Dieback Disease in Mineral Exploration*.
- DoIR (WA) (1995) *Information Series No. 11: Guidelines for Mineral Exploration and Mining within Conservation Reserves and other Environmentally Sensitive Lands in WA.*
- DoIR (WA) (1997) *Information Series No.16: Guidelines for Management of Declared Rare Flora in Mineral Exploration and Mining*. DoIR (WA) (1997) *Information Series No. 17*: *Grant of Mining Tenements Involving Reserved Lands, Townsites, Foreshore, Seabed and Navigable Waters (Reserved Lands)*.
- DoIR (WA) (2001) *Working with Aboriginal Communities*.
- DoIR (WA) (2004) *Guidelines for Consultation with Indigenous People by Minerals Explorers*.
- DoIR (WA) (2005) *Guidelines for the Preparation of an Annual Environmental Report*.
- EPA (2003) Consideration of Subterranean Fauna in Groundwater and Caves During Environmental Impact Assessment. *Guidance Statement No 54.*
- EPA (2004) Terrestrial Flora and Vegetation. *Guidance Statement No 51*.
- EPA (2004) Terrestrial Fauna Surveys for Environmental Impact Assessment. *Guidance Statement No 56.*
- Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, The Australian Institute of Geoscientists and the Minerals Council of Australia (December 2004) *Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves*.
- Minerals Council of Australia (2000) *Australian Minerals Industry Code for Environmental Managemen*t.

5.2 Other DoIR Publications

- DME (WA) (1996) *Guidelines for Mining in Arid Environments*.
- DME (WA) (1998) *Guidelines on the Development of an Operating Manual for Tailings Storage*.
- DME (WA) (1999) *Guidelines on Safe Design and Operating Standards for Tailings Storage*.
- MPR (WA) (2002) *Guidelines for the Protection of Surface and Groundwater Resources During Exploration Drilling*.

5.3 Commonwealth Publications

The Commonwealth Department of the Environment and Heritage has published a series of modules on *Best Practice Environmental Management in Mining* covering a wide range of subjects including auditing, exploration techniques, etc. Copies are available from appropriate Commonwealth publication offices throughout Australia or online at http://www.environment.gov.au.

APPENDIX 1
GLOSSARY OF TERMS AND ABBREVIATIONS

This glossary defines the meaning of terms and abbreviations used in relation to mining proposals.

LIST OF TERMS

Application: refers to the documentation that initiates the process of determining a tenement under the Mining Act.
CAMBA - China-Australia Migratory Birds Agreement. An agreement between the Government of Australia and Government of China for the protection of migratory birds and their environment.
Conservation reserves: includes national parks, nature reserves, conservation parks, State forests and timber reserves as administered by DEC and vested in the Conservation Commission of Western Australia. (See http://www.conservation.wa.gov.au.)
Developmental mining: where a proposal or project has gone beyond the exploration stage and developmental or productive mining and associated construction activities are proposed.
Disturbed: area where vegetation has been cleared and/or topsoil (surface cover) removed. This may include areas impacted by dust, changes in hydrology and ground compaction etc.
Earthworks: Reshaping, landscaping, capping, water/wind erosion control and rock armouring.
Infrastructure: All other areas impacted by mining operations such as roads, offices, camps, workshop areas, storage facilities, low grade stockpiles, load outs and bore fields (excluding exploration areas).
Grant: The approval of an application for a Mining Act tenement and includes a list of environmental conditions and endorsements imposed on the tenement.
JAMBA - Japan-Australia Migratory Birds Agreement. An agreement between the Government of Australia and Government of Japan for the protection of migratory birds and their environment
JORC code: *Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves*, published by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists and the Minerals Council of Australia in December 2004.
Low Impact Mining Operations: Mining operations that have a minimal or low impact upon the environment. Types of LIMOs are provided in Appendix 2.
Mineral processing facilities: All processing facilities for ore treatment including crushing plants, grinding, vat leach, heap leach, dump leach and tailings disposal.
Mining Act Tenement: Refers to a prospecting licence, exploration licence, retention licence, mining lease, miscellaneous licence, or a general purpose lease or their equivalents under the *Mining Acts 1904 and 1978.*
Notice of intent: Commonly known as an NOI. This document outlined the proposed mining operations and measures to protect the environment including rehabilitation, in order to gain approval to mine. The NOI has been superseded by mining proposal.
Notification: There are instances where it is useful for the EPA and/or DEC to be informed or advised about a proposal even if formal referral is not required. This advice is termed notification.
Other environmentally sensitive areas (ESA): This classification applies to land not reserved or currently proposed for reservation but which DoIR agrees warrants protection (remnant Kimberley rain forest, monitoring sites, areas of declared rare flora, mangrove communities, turtle breeding sites and the EPA's Environmental Protection Policy (EPP) relating to the Swan Coastal Plain Lakes) and, if relevant, application of the dieback prevention condition. The EPA and DEC will be consulted to define other environmentally sensitive areas.
Referral: Within the meaning of the Environmental Protection Act, referral implies that a proposal will be formally sent to the EPA for assessment under section 38 of the Environmental Protection Act.
Rehabilitated: Areas which have been stabilised, vegetated and drainage control measures put in place.
Revegetation: Establishment of self sustaining vegetation cover after earthworks have been completed.
Pits: All open excavations including active mineral rock, gravel, sand, clay, bauxite and salt-pan extraction areas.
Project: The total integrated mining operations in which a number of sites contribute to the overall operation to supply ore, processing facilities and disposal of waste products.
Tenement: Land tenure granted under the Mining Act, for example mining lease, exploration licence, prospecting licence, miscellaneous licence, and general purpose lease.
Waste dumps: Includes all mullock, waste disposal areas and below grade material.

LIST OF ABBREVIATIONS

AER	-	Annual Environmental Report
AMD	-	Acid mine drainage
ARD	-	Acid rock drainage
ARI	-	Assessment on referral information
CEO	-	Chief Executive Officer
CER	-	Consultative environmental review
CIP	-	Carbon in pulp
DEC	-	Department of Environment and Conservation
DIA	-	Department of Indigenous Affairs
DMA	-	Decision making authority
DME	-	Former Department of Minerals and Energy (now DoIR)
DOCEP	-	Department of Consumer and Employment Protection
DoIR	-	Department of Industry and Resources
DoW	-	Department of Water
DRF	-	Declared rare flora
EIA	-	Environmental impact assessment
EMP	-	Environmental management plan
EMS	-	Environmental management system
EPA	-	Environmental Protection Authority
EP Act	-	*Environmental Protection Act 1986*
EPBC Act	-	*Environment Protection and Biodiversity Conservation Act 1999*
EPP	-	Environmental Protection Policy
EPS	-	Environmental protection statement
ERMP	-	Environmental review and management program
ESA	-	Environmentally sensitive area
FPC	-	Forests Products Commission
G	-	General purpose lease (under the *Mining Act 1978*)
GSA	-	Geoscientific Survey Authority
ICMM	-	International Council on Mining and Metals
ISO	-	International Standards Organisation
LIMO	-	Low impact mining operations (see section 2.3 and Appendix 2)
M	-	Mining lease (under the *Mining Act 1978*)
MCA	-	Minerals Council of Australia M
ELC	-	Mining Environment Liaison Committee
MILC	-	Mining Industry Liaison Committee
MOU	-	Memorandum of Understanding
MPR	-	Former Department of Mineral and Petroleum Resources (now DoIR)
MRD	-	Main Roads Department
MTO	-	Mineral titles online
MTSD	-	Mineral and Title Services Division (DoIR)
NOI	-	Notice of intent
ODAC	-	Office of Development Approvals Co-ordination
OWP	-	Office of Water Policy
PAF	-	Potentially acid forming
PER	-	Public Environment Report
PMP	-	Project management plan
PDD	-	Project definition document
PUEA	-	Proposal unlikely to be environmentally acceptable
QMS	-	Quality management system
RCA	-	Register of certified auditors of Australasia
SME	-	State Mining Engineer
TECS	-	Threatened ecological communities
TDS	-	Total dissolved solids
TS	-	Tailings storage
TSS	-	Total suspended solids
UPB	-	Unconditional performance bond

APPENDIX 2
INTERNATIONAL COUNCIL ON MINING AND METALS
GUIDING PRINCIPLES FOR RESPONSIBLE DEVELOPMENT

The following International Council on Mining and Metals (ICMM) principles were adopted by the Minerals Council of Australia as a basis to develop the enduring value for the mining industry in 2004.

1. Implement and maintain ethical business practices and sound systems of corporate governance.

2. Integrate sustainable development considerations within the corporate decision-making process.

3. Uphold fundamental human rights and respect cultures, customs and values in dealings with employees and others who are affected by our activities.

4. Implement risk management strategies based on valid data and sound science.

5. Seek continual improvement of our health and safety performance.

6. Seek continual improvement of our environmental performance.

7. Contribute to conservation of biodiversity and integrated approaches to land use planning.

8. Facilitate and encourage responsible product design, use, re-use, recycling and disposal of our products.

9. Contribute to the social, economic and institutional development of the communities in which we operate.

10. Implement effective and transparent engagement, communication and independently verified reporting arrangements with our stakeholders.

Further information available from the ICMM website, http://www.icmm.com

APPENDIX 3
LOW IMPACT MINING OPERATIONS

Mining proposals for some LIMOs can be submitted using the LIMO pro froma. The relevant DoIR environmental officer should be contacted to determine whether a LIMO pro forma is suitable for the particular mining proposal, taking into account the size, scale and location of the operation together with the likely environmental impacts. The contacts for the environmental officer for each mineral field are available at Appendix 4 or from DoIR's website at: http://www.doir.wa.gov.au/environment/1B97FAF5595F4B0B888A1F70E69673FE.asp

Examples of types of mining operations that may qualify as LIMOs include:

- Costean, trenching and small bulk samples.
- Shallow surface pushing / scraping for metal detecting.
- Dryblowing.
- Small wet alluvial plants.
- Winzing / shaft sinking / small underground operation.
- Small scale ornamental rock, sand and gravel operations.
- Mini carbon in pulp (CIP) / carbon in leach (CIL) with minimal tailings (below 5,000 tonnes of tails).
- Small scale vat leach (below 5,000 tonnes).
- Ornamental rock operations involving less than 200 tonnes of product being removed per year.
- Single person operations.
- Operations occurring outside of environmentally sensitive areas or not likely to cause any significant environmental impacts.
- Operations involving less than two hectares mined per year.

Other operations may qualify depending on the low impact nature and the environmental sensitivity of the area involved.

The LIMO pro forma is provided in Appendix 3 and is also available at:
http://www.doir.wa.gov.au/documents/environment/LIMO-Jan06.pdf

The above web address should be checked regularly for updated versions of the LIMO pro forma.

APPENDIX 4
LOW IMPACT MINING OPERATIONS PROFORMA

Department of
Industry and Resources

ENVIRONMENT DIVISION
Minerals Environment Branch

LOW IMPACT MINING OPERATIONS PRO FORMA

Please consult with the environmental officer for the relevant mineral field to check whether the LIMO pro forma is suitable for your mining proposal. This pro forma is available online at: http://www.doir.wa.gov.au/documents/environment/LIMO-Jan06.pdf

Forward the completed pro forma with attachments to the regional address. Additional information may be attached if space is insufficient (with each page signed and dated).

PROJECT TITLE:	
MINING TENEMENTS:	
TENEMENT HOLDER'S NAME/S:	
PROJECT LOCATION:	
OPERATOR'S NAME:	
MAILING ADDRESS:	
CONTACT POINTS: (MESSAGES, PHONE, FAX, EMAIL)	
MINERAL/S TO BE MINED:	

IS THE OPERATION UNDER A TRIBUTE ARRANGEMENT?	(TICK) YES	NO

PROPOSED MINING ACTIVITIES

	(TICK) YES	NO		(TICK) YES	NO
DRYBLOWING:			ALLUVIAL WET PLANT:		
SCRAPING / DETECTING:			COSTEAN / TRENCHING:		
BULK SAMPLING:			DRILLING:		
OTHERS (SPECIFY):					

ESTIMATED TONNAGE OF MATER IAL (WASTE ROCK, SOIL AND ORE) TO BE DISTURBED:	TOTAL FOR PROPOSAL	TONNES
	TOTAL PER YEAR	TONNES
ESTIMATED DRY PLANT THROUGHPUT (IF APPLICABLE)	TOTAL PER YEAR	TONNES
ESTIMATED WET PLANT THROUGHPUT (IF APPLICABLE)	TOTAL PER YEAR	TONNES

DESCRIBE EXCAVATIONS (NUMBER OF EXCAVATIONS, LENGTH, WIDTH, DEPTH):

TYPES AND SIZES OF MINING EQUIPMENT AND MACHINERY TO BE USED:

DESCRIBE ALL OTHER FACILITIES – LIVING QUARTERS, SHEDS, MAGAZINES ETC:

ESTIMATED COMMENCEMENT DATE:		ESTIMATED COMPLETION DATE:	

ESTIMATED NUMBER OF MONTHS WORKED PER YEAR:

AREAS OF DISTURBANCE FOR PROJECT (MUST BE COMPLETED)

DISTURBANCE TYPE (HECTARES)	LIST HOW MUCH AREA WILL BE CLEARED EACH YEAR FROM 30 JUNE TO 01 JULY PER TENEMENT TENEMENTS			
SURFACE MINING:				
OVERBURDEN / WASTE DUMPS:				
TAILINGS DAMS:				
CAMP / WORKSHOP AREAS:				
HARDSTAND / ROADS:				
OTHER (SPECIFY):				
TOTALS:				

EXISTING GROUND CONDITIONS (INCLUDE SITE PHOTOGRAPHS)

	(TICK) YES	NO		(TICK) YES	NO
OPEN SCRUB:			DENSE SCRUB:		
LOW SCRUB:			TALL SCRUB:		
SALT BUSH / BLUE BUSH:			SPINIFEX COUNTRY:		
SALT LAKE / MARSH:			SAND DUNE COUNTRY:		
SOME TREES:			MANY TREES:		
FLAT COUNTRY:			HILLY COUNTRY:		
BREAKAWAY COUNTRY:			CREEK -LINES:		
OTHER (SPECIFY):					

	(TIC K) YES	NO
ANY PREVIOUS WORKINGS (HISTORICAL MINES, SHAFTS, OPEN STOPES, TAILS OR SLIMES DAMS, DUMPS, OLD EQUIPMENT, ETC)?		

IF YES, DESCRIBE:

*** IMPORTANT - ATTACH SITE SKETCH (SEE NOTE 1 ON LAST PAGE) ***

WATER

WHERE WILL WATER BE OBTAINED FROM?	(TICK YES / NO) PROCESS	DOMESTIC
SURFACE DAMS:		
GROUNDWATER BORES:		
OTHER (DESCRIBE):		

DESCRIBE WATER QUALITY (USE "FRE SH" / "BRACKISH" / "SALTY" IF WATER QUALITY NOT ANALYSED) AND WATER QUANTITY USED (KILOLITRES/YEAR) FOR:

	QUALITY	QUANTITY (KL/Y)
PROCESS WATER:		
DOMESTIC WATER:		

	(TICK) YES	NO
ARE YOU REQUIRED TO HAVE A SURFACE OR GROUNDWATER LICENCE?		

IF YES, SPECIFY TYPE:

	(TICK) YES	NO
IF NO, THEN HAVE YOU CHECKED THIS WITH THE DEPARTMENT OF ENVIRONMENT (DOE)?		

WHICH DOE OFFICE? WHEN?

*** ATTACH A COPY OF ANY WATER QUALITY ANALYSIS AND APPROVALS ***

PASTORALIST

	(TICK) YES	NO
IS THE OPERATION ON A PASTORAL LEASE?		
IF YES, HAS THE PASTORALIST BEEN CONSULTED REGARDING THE MINING PROPOSAL?		

HOW CONSULTED? WHEN?

PLEASE ATTACH COPIES OF ANY CORRESPONDENCE TO THE PASTORALIST

WHAT WAS OUTCOME?

REHABILITATION

	(TICK) YES	NO	COMMENTS OR ADDITIONAL INFORMATION
WINDROWS, STOCKPILES, DUMPS AND PADS LEVELLED OFF:			
TOPSOIL STOCKPILED SEPARATELY AND RESPREAD:			
COSTEANS, TRENCHES, SUMPS, EXCAVATIONS BACKFILLED:			
COMPACTED A REAS DEEP RIPPED (ROADS, LAYDOWN AREA, CAMP SITES ETC.):			
REHABILITATED GROUND, TRACKS AND HARDSTAND DEEP RIPPED OR SCARIFIED:			
EROSION CONTROL (CONTOUR RIPPING, RUNOFF CATCHMENTS, BERMS ETC):			
CLEARED VEGETATION RESPREAD:			
MINING PLANT, CAMP SITE AND OTHER FACILITIES REMOVED:			
CREEKS, DRAINAGE LINES RESTORED:			
RUBBISH REMOVED OR BURIED:			
DRILLHOLES SECURELY PLUGGED BELOW GROUND, WATERBORES CAPPED:			
SAMPLE BAGS REMOVED:			
OTHER REHABILITATION (SPECIFY):			

	(TICK) YES	NO
AT THE COMPLETION OF MINING OPERATIONS, WILL ANY LAND IMPROVEMENTS BE HANDED OVER TO THE PASTORALIST:		

IF YES, SPECIFY:

Please note that the pastoralist will have to obtain the written approval of the Pastoral Lands Board (Department of Planning and Infrastructure) for any mining related land improvements that are intended for transfer over to the pastoral lease, otherwise rehabilitation is to occur.

ANNUAL ENVIRONMENTAL REPORT

The requirement to submit an AER will be imposed as a tenement condition following mining approval. For your convenience, an AER pro forma for LIMOs is available from the DoIR website or regional office. The AER is to be submitted each year on the anniversary date (end of month) of project approval or at project completion. If the anniversary month is inconvenient, you are at liberty to nominate any other month, see question below.

DO YOU WISH TO NOMINATE A SPECIFIC MONTH FOR SUBMISSION OF THE ANNUAL ENVIRONMENTAL REPORT? IF YES, PLEASE SPECIFY:	MONTH

PLEASE NOMINATE WHO WILL SUBMIT THE ANNUAL ENVIRONMENTAL REPORT (NAME AND POSITION - OPERATOR, LESSEE, OTHER - SPECIFY)?

ATTACHMENTS

NOTE:
1. Attach a sketch plan showing location of plant, camp, access routes, major land features, areas to be disturbed, lease boundaries, previous or historical workings and any old shafts, open stopes or costeans. Include site photographs if available showing vegetation, existing conditions and any previous mining disturbances.
2. Attach any water quality analysis data and copies of Water Licences.
3. If the operator is not the tenement holder, then a letter must be attached from the tenement holder giving authorisation for the operator to conduct the mining project as described in LIMO pro forma.

THE COMPLETED LIMO PROFORMA MUST BE SIGNED BY ALL TENEMENT HOLDERS.

NAME: _____ SIGNED: _____ DATE: _____

NAME: _____ SIGNED: _____ DATE: _____

REGIONAL ADDRESSES

NORTH WEST AND SOUTHWEST REGIONS	GOLDFIELDS REGION
MINERALS ENVIRONMENT BRANCH DEPARTMENT OF INDUSTRY AND RESOURCES 100 PLAIN STREET EAST PERTH WA 6004 TEL: (08) 9222 3084 FAX: (08) 9325 3860	MINERALS ENVIRONMENT BRANCH DEPARTMENT OF INDUSTRY AND RESOURCES PO BOX 10078 KALGOOR LIE WA 6430 TEL: (08) 9021 9405 FAX: (08) 9021 9444
MINERAL FIELDS: 01, 04, 08, 09, 12, 20, 21 ,45, 46, 47, 51, 52, 57, 58, 59, 66, 70, 74, 77, 8	**MINERAL FIELDS:** 15, 16, 24, 25, 26, 27, 28, 29, 30, 31, 36, 37, 38, 39, 40, 53, 63, 69

APPENDIX 5
CONTACTS FOR DEPARTMENT OF INDUSTRY AND RESOURCES ENVIRONMENTAL OFFICERS

The Minerals Environment Branch of the Environment Division of DoIR has two regional environmental inspectorates:

- **Northern region** (Office in Mineral House Perth)
    - Kimberley, Pilbara, Northern, Deserts, Ashburton, Gascoyne

- **Southwest and Goldfields region** (Main office in Mineral House Perth with a District Office at Kalgoorlie)
    - Midwest, Goldfields, Southern Deserts, Southwest

The State is divided up into various mineral fields with environmental officers assigned to different mineral fields as displayed on the regional inspectorate map. The full version of the inspectorate map showing the DoIR environmental officer for each mineral field and the regional boundaries is available at:

http://www.doir.wa.gov.au/environment/1B97FAF5595F4B0B888A1F70E69673FE.asp

Phone and mailing contacts for are provided below:

Northern region
100 Plain Street
EAST PERTH WA 6004
Phone: (08) 9222 3333
Fax: (08) 9222 3860

Southwest and Goldfields region
100 Plain Street
EAST PERTH WA 6004
Phone: (08) 9222 3333
Fax: (08) 9222 3860

Goldfields Subregion Kalgoorlie
48-52 Brockman Street
KALGOORLIE WA 6430
(PO Box 10078, Kalgoorlie WA)
Phone: (08) 9021 9405
Fax: (08) 9021 9444

APPENDIX 6
MINING PROPOSAL CHECKLIST

This checklist must be completed and be included in the mining proposal after the title page.

The mining proposal checklist is designed to ensure that the proponent provides all required information and to enable fast and accurate assessment without the need for the assessing officer to seek further information or clarification. If critical issues have not been addressed in the mining proposal or the checklist information is found to be incorrect then assessment may be discontinued and the mining proposal returned.

For mining proposals where ODAC assistance is being sought, the checklist should be expanded to incorporate the requirements of the project definition document (see section 3.1 - Consultation and Project Scoping).

Please cross reference page numbers from the Mining proposal where appropriate.

Q No	Mining proposal checklist	Y/N NA	Page No	Comments
	Public availability			
1	Are you aware that the mining proposal is publicly available?			
2	Is there any information in this mining proposal that should not be publicly available?			
3	If "No" to Q2, do you have any problems with the information contained in this mining proposal being publicly availability?			
4	If "Yes" to Q2, has confidential information been submitted in a separate document/section?			
5	Has the mining proposal been endorsed? See last page Checklist.			
	Mining proposals details			
6	Have you included the tenement number(s), site name, proposal overview and date in the title page?			
7	Who authored the mining proposal?			
8	State who to contact enquiries about the mining proposal?			
9	How many copies were submitted to DoIR?	Hard copies =		
		Electronic =		
10	Is this mining proposal to support lease application?			
11	Has a geological resource statement been included (refer section 4.3.2 of mining proposal guidelines)			
12	Will more than 10 million tonnes of ore and waste be extracted per year? State total tonnage:			
13	Will more than 2 million tonnes of ore be processed be year? State total throughput.			
14	Is the mining proposal located on pre-1899 Crown Grant lands? (not subject to the Mining Act)			
15	Is the mining proposal located on reserve land? If "Yes" state reserve types in space below.			
16	Will the mining proposal occur within or affect a declared occupied townsite?			
17	Is the mining proposal within 2km of the coastline or a Private Conservation Reserve?			
18	Is the mining proposal wholly or partially within a World Heritage Property, Biosphere Reserve, Heritage Site or Soil Reference Site.			
	Tenement Details			
19	Are all mining operations within granted or applied for tenement boundaries?			
20	Are you the tenement holder of all tenements?			
21	If "No" at 20, do you have written authorisation from the tenement holder (s) to undertake the Mining proposal activities (Refer to section 4.2.1 of the Mining Proposal Guidelines)			
22	Is "Yes" at 21, then is a copy of the authorisation contained within the mining proposal?			
23	Have you checked for compliance against tenement conditions?			

Q No	Mining proposal checklist	Y/N NA	Page No	Comments
	Location and Site Layout Plans			
24	Have you included location plans showing tenement boundaries and mining operations?			
25	Have you included site layout plans showing all mining operations and infrastructure in relation to tenement boundaries?			
26	Have you included Area of Disturbance Tables for all tenements impacted by mining operations?			
	Environmental Protection Act			
27	Does the mining proposal require referral under part four or the MOU? If 'Yes' describe why in space below:			
28	Has the EPA set a level of assessment? If yes state:			
29	Is a clearing permit required? If 'No' then explain why in space below?			
30	If 'Yes' at Q29 then has a permit been applied for?			
31	Is a works approval required by the DEC?			
32	Has a Works Approval been submitted to the DEC?			
33	**Stakeholder Consultation -** Have the following stakeholders been consulted? (use N/A if not relevant)			
	Shire?			
	Pastoralist?			
	DEC?			
	Main Roads?			
	Others? (specify):			
	Environmental Assessment and Management			
34	Is the mining proposal wholly or partially within DEC managed areas?			
35	If 'yes' at Q34 has DEC been consulted?			
36	Is the mining proposal wholly or partially within a red book area or a bush forever site?			
37	Will the mining proposal impact upon a water resource area, water reserve, declared or proposed catchment, groundwater protection area, significant lake or wetland?			
38	Is a water or de-watering licence required?			
39	If 'Yes' at Q39 then has the licence(s) been applied for?			
40	Does the mining proposal includes a new tailings storage or changes to existing tailings storage ?			
41	Has AMD assessment been undertaken?			
42	Have flora and fauna checks been undertaken?			
43	Are any rare species present?			
44	Has preliminary closure plan has been included?			

I hereby certify that to the best of my knowledge the above checklist accurately reflects the information contained within this mining proposal.

Name: Signed: Date:

Position:

APPENDIX 7
ENVIRONMENTAL AND OTHER APPROVALS

In addition to gaining written approval from the Director of DoIR's Environment Division to commence mining under the Mining Act, other statutory approvals or licences may be required from various government agencies before mining can begin. This Appendix identifies some of the key environmental and other approvals that may be required from these other agencies.

Compliance with environmental and other approvals or licenses under other statutory control is the responsibility of the proponent. Where relevant, the Mining proposal should provide evidence that other required approvals have been obtained.

7.1 Environmental Impact Assessment, Pollution Control and Land Clearing

On behalf of the Minister for the Environment, DEC administers and the Environmental Protection Act. Part IV of this Act deals with the Minister's and the authority's responsibilities for the EIA of new or expanded proposals in Western Australia.

Part V of the Environmental Protection Act deals with the licensing and control of pollution from prescribed premises, and land clearing.

Both these Parts of the Environmental Protection Act may relate to new or expanded mining projects

7.1.1 Environmental Impact Assessment – Part IV *Environmental Protection Act 1986*

Although the requirement for a mining proposal is created through the provisions of the Mining Act, the Environmental Protection Act, administered by DEC, is the State's main instrument for environmental protection and overarches the Mining Act. The assessment and approval processes for mining projects for both of these Acts have been successfully integrated through a Memorandum of Understanding (MOU) between DoIR and the EPA for onshore (land-based) exploration and mining proposals. If proposals trigger environmentally sensitive issues described within the MOU, the mining proposal must be referred to the EPA service unit at DEC for additional environmental assessment.

The MOU between DoIR and the EPA was established in the early 1990s and revised in December 2004. The purpose of this MOU is to establish an efficient and transparent administrative process to determine which mining proposals can be assessed and managed by DoIR under the Mining Act and which environmentally significant proposals require referral to the EPA under the Part IV (Environmental Impact Provisions) of the Environmental Protection Act. The summary table from the MOU is provided at Appendix 8.

It is essential that the proponent is familiar with the MOU, as it determines whether EPA referral is required. Referral could in turn lead to the EPA accepting the mining proposal for formal assessment under the Environmental Protection Act, which could require further environmental documentation and stakeholder consultation. Further information can be obtained from the EPA's website at: http://www.epa.wa.gov.au

Although DoIR assess and regulates a large proportion of Mining proposals, the EPA does not abrogate its responsibilities in regard to environmental assessment. Under the Environmental Protection Act, the EPA may at any time call in any proposal that is likely to have a significant effect on the environment.

It is important to note that under Section 41 of the Environmental Protection Act, any decision making authority (DMA) including DoIR is unable to issue approval until the EPA has completed its assessment of the proposal and has notified the DMA that the proposal is environmentally acceptable.

For further information on referrals and assessments under Part IV of the Environmental Protection Act:

EPA Service Unit
Environmental Protection Authority
Level 8, Westralia Square
141 St George's Terrace PERTH WA 6000
Phone: (08) 9222 7000
Fax: (08) 9222 7155
Website: www.epa.wa.gov.au

7.1.2 Works Approvals and Prescribed Premises Licenses – Part IV *Environmental Protection Act 1986*

Under the provisions of Part V of the Environmental Protection Act, if the mining proposal has prescribed premises, then works approval will be required from DEC before any construction begins. An operating licence is also required before the prescribed premises can legally have production on it. Common prescribed premises on mining sites include processing plants, de-watering discharges, tailings facilities, process ponds and other aspects of the mining operation with the potential to pollute.

Applications for and issue of works approvals and Licences are now advertised for a 21 day comment period for applications, with a further 21 days for appeals against issue.

Application forms and guidelines for works approvals and Licenses under Part V of the Environmental Protection Act are available from the DEC or their web site at http://www.dec.wa.gov.au/. Further enquiries on Part V requirements should be made to the relevant DEC regional office. Contact details can be obtained from DEC's website, or by contacting either of DEC's Perth offices:

The Atrium
168 St Georges Terrace,
PERTH WA 6000
(PO Box K822, Perth WA 6842)
Phone: (08) 6364 6500
Fax: (08) 6364 6520

Westralia Square
141 St Georges Terrace
PERTH WA 6000
(PO Box K822, Perth WA 6842)
Phone: (08) 9222 7000
Fax: (08) 9322 1598

7.1.3 Land Clearing Legislation and Clearing Permits

From 8 July 2004, any clearing of native vegetation for mining or exploration activities requires a permit under Part V of the Environmental Protection Act, except where exemptions are granted under Schedule 6 of the Environmental Protection Act, or prescribed by regulation in the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*. The former clearing control provisions using the *Notice of Intention to Clear Land* form no longer apply as the *Soil and Land Conservation Act 1945* has been repealed in favour of the new Environmental Protection Act clearing legislation.

Under the new clearing legislation, many activities involving clearing on mining and exploration sites will require a clearing permit prior to commencement. DoIR has the delegated authority to issue clearing permits for Mining Act sites and information about clearing is provided on DoIR's website at
http://www.doir.wa.gov.au/environment/EA5A0295E9334F19B992E09D599ACA69.asp

Some mining proposals are exempt from clearing, if:

1. They qualify for exemption under the schedule 1 of the *Environmental Protection Act (Clearing of Native Vegetation) Regulations 2004* for low impact operations.
2. The mining proposal is subject to a formal assessment by the EPA and qualifies for exemption under schedule 6 of the Environmental Protection Act.

If a clearing permit is required, it is recommended that the permit application is made concurrently with or as part of the mining proposal. The mining proposal can be used as supporting documentation for the clearing permit application. Clearing permits can take on average about three months for finalisation if no major issues are encountered.

There are two types of clearing permits: area permits, and purpose permits.

7.1.3.1 Area Permit

An area permit:

- authorises clearing of a particular area for a specified period;
- is given to the owner as defined in section 51A of the EP Act; and
- is valid for a default of two years.

To obtain an area permit you must be the landowner, likely to become the landowner or have the written authorisation of the owner to undertake the clearing. The definition of "owner" under section 51A of the Environmental Protection Act includes land:

- held as lease issued by the Crown (pastoral lease, mining and general purpose leases);
- in fee simple;
- alienated by the crown to the benefit of an agreement held by a person; and
- in the care, control or management of a public authority (i.e. Shire) or, if unvested, the Crown.

In the case of underlying private land, unallocated Crown land and leasehold land (but not on granted mining tenements), Mining Act leaseholders will be required to have written authorisation from the underlying landowner for an area permit – as per section 51E(2) of the Environmental Protection Act.

7.1.3.2 Purpose Permit

A purpose permit:

- authorises clearing of different areas from time to time for a purpose specified in the permit;
- is given to the person doing the clearing (who may not be the legal owner, e.g. Local Government Authority, mineral exploration or mining company, prospector); and
- is valid for a default of five years.

All applications for a clearing permit are advertised, inviting comment from interested parties. The comment period is 21 days.

Following assessment, the decision to issue a permit or refuse a permit is also advertised and there is a 28 day appeal period for applicant and third party appeals on the refusal of a permit or on conditions. There is a 21 day appeal period for third-party appeals on the grant of a permit.

Application forms and information regarding land clearing permits are available from the DoIR web site at http://www.doir.wa.gov.au/environment/, or by contacting:

Native Vegetation Assessment Branch
Department of Industry and Resources
100 Plain Street
EAST PERTH WA 6004
Phone: (08) 9222 3570
Fax: (08) 9222 3077

7.1.4 Ten Principles for Clearing Native Vegetation

Clearing applications are assessed against ten principles for clearing native vegetation outlined in schedule 5 of the Environmental Protection Amendment Act. These principles aim to ensure that all potential impacts resulting from removal of native vegetation can be assessed in an integrated way.

The principles address three main environmental areas:

- Biodiversity significance
- Land degradation
- Ground and surface water quality.

Native vegetation should not be cleared if:

a) it comprises a high level of biological diversity;
b) it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia;
c) it includes, or is necessary for the continued existence of, rare flora;
d) it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community;
e) it is significant as a remnant of native vegetation in an area that has been extensively cleared;
f) it is growing in, or in association with, an environment associated with a watercourse or wetland;
g) the clearing of the vegetation is likely to cause appreciable land degradation;
h) the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area;
i) the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water; or
j) the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

7.2 Conservation and Land Management

DEC, under the *Conservation and Land Management Act 1984,* administers all reserved land vested in the Conservation Commission. Collectively, such reserved land is referred to as the conservation estate or DEC managed lands.

DEC also administers the Wildlife Conservation Act. This Act applies to native flora and fauna on all lands within Western Australia. The requirements of this Act must be observed by all mining operations in this State.

The primary point of contact at DEC is the Environmental Management Branch and the relevant DEC regional office. The branch will refer proponents on to other DEC units or regional offices if necessary. Contact details are as follows:

Environmental Management Branch
Department of Environment and Conservation
17 Dick Perry Avenue
Western Precinct, Technology Park
KENSINGTON WA 6151
Phone: (08) 9334 0365
Fax: (08) 9367 9913
Website: http://www.dec.wa.gov.au/

The Conservation Commission of Western Australia is the statutory body in which the majority of DEC managed lands are vested under the Conservation and Land Management Act. The Commission has a full time Chairman, an appointed membership of seven people and a small number of service staff. The Commission has a role in considering development proposals that may affect the values of vested lands or impacts on biodiversity more generally and may need to be consulted in relation to new Mining proposals.

All proposals to consult with the Commission in relation to mining proposals should be initiated through the Environmental Management Branch of DEC in the first instance.

The Commission's predecessor, the National Parks and Nature Conservation Authority, developed policies on mining on vested lands and flora and fauna surveys. While these no longer have full currency as official policy, they provide a useful reference for preparation of Mining proposals.

7.2.1 Mining on or Adjacent to DEC Managed Land

Mining on the DEC estate is governed by section 24 of the Mining Act, which requires that the Minister for the Environment provides consent or makes recommendations under the Conservation and Land Management Act. Such proposals also require the same Minister's consent or advice under the Environmental Protection Act, following assessment by the EPA.

Procedures for the consideration of all mineral tenement applications on all types of reserved land, and the likely assessment outcomes and conditions applied (if approved) are given in detail in the DoIR's http://www.doir.wa.gov.au/environment/ ED_Min_GL_MinExpMiningInConservReservesEnvSensitiveLandsWA_Jan07.pdf.

For proposals on DEC pastoral leases or former pastoral leases managed by DEC, consult with the relevant DEC regional office and provide evidence of DEC's advice in regard to the proposal.

It is important to realise that DEC is involved with:

1. The early screening and approvals of mining lease applications on the conservation estate; as well as,
2. The preparation of a mining proposal for a mining project to take place on an approved mining lease that is on, or adjacent to DEC managed land.

Hence, for activities proposed for DEC managed lands, it is crucial that contact is made with DoIR environment officers and relevant DEC officers as early as practicable.

7.2.2 Approvals under the Wildlife Conservation Act

Permits are required from DEC in order to take, interfere or destroy DRF. Appropriate procedures are described in the DoIR's http://www.doir.wa.gov.au/ ED_Min_GL_IS_MgmtDeclaredRareFauna_Jan07.pdf.

A scientific or other prescribed purpose licence is required from DEC when collecting plant specimens for flora surveys, carrying out fauna survey work or harvesting native plant seed for mining rehabilitation.

A commercial purposes licence from DEC is required if the seed to be collected is from outside the mining tenements. A licence is required for each collector.

7.2.3 Specially Protected Fauna

Information on native fauna required for the Mining proposal is described in section 4.5.6. Fauna survey requirements will depend on the existing level of knowledge and the likely impacts of mining on habitats supporting specially protected fauna (including invertebrate fauna).

Data for known occurrences of specially protected fauna can be obtained from the DEC Species and Communities Branch (see contact details below in Section 7.2.5). A fee is charged by DEC for this information.

7.2.4 Flora and Vegetation

The mining proposal requirements for flora and vegetation are described in Section 4.5.6. A survey of flora and vegetation should be routine at all proposed mine sites.

Plants of DRF and priority flora listing should not be directly or indirectly affected without the prior written permission of the Minister for Environment or the Executive Director DEC, respectively. The potential for impact on DRF and Priority List Flora should be discussed with DEC before completing any mining proposal. Proponents should aim to demonstrate that their impacts will not affect the conservation status of the affected species.

Data on DRF and priority list flora can be obtained from the DEC Species and Communities Branch (see contact details below in Section 7.2.5). DEC charges a fee for this information.

If native vegetation is to be cleared, DEC will be consulted for advice during the assessment process for a Clearing Permit application.

7.2.5 Threatened Ecological Communities

DEC are in the process of identifying threatened ecological communities (TECS). The most comprehensive information on the location of identified TECS is available from DEC for the region between Moore River and Busselton. DEC's Threatened Species and Communities Unit can provide limited data on some other areas. Further information can be obtained by contacting the following:

Species and Communities Branch -Flora and Fauna
Department of Environment and Conservation
17 Dick Perry Avenue
Western Precinct Technology Park
Phone: (08) 9334 0455
Fax: (08) 9334 0278

Species and Communities Branch - Ecological Communities
Department of Environment and Conservation
PO Box 51 Wanneroo WA 6946
Phone: (08) 9405 5128
Fax: (08) 9306 1066

7.3 Aboriginal Heritage

All tenements are granted with an endorsement that reads "the Lessee's attention is drawn to the provisions of the Aboriginal Heritage Act and any Regulations thereunder."

For advice on the actions necessary to comply with this legislation and a search of known registered sites, please contact:

Department of Indigenous Affairs
Level 1, 197 St George's Terrace PERTH WA 6000
Phone: (08) 9235 8000
Fax: (08) 9235 8088
Website: www.dia.wa.gov.au

An online Aboriginal heritage enquiry system is available on the DIA website at:
http://www.dia.wa.gov.au/heritage/sitessurveys.aspx

7.4 Water Allocation, Protection and Conservation

DoW was formed in January 2006 and has taken on the responsibilities of the former Waters and Rivers Commission and Department of Environment in relation to water allocation, protection and conservation of the State's water resources.

Specific DoW responsibilities are to:

- Licence the allocated use of water resources.
- Protect water quality.
- Conserve and manage all rivers and water ways.
- Investigate groundwater resources.
- Measure water resource flow and quality.

The water resources managed by DoW include all inland surface water (rivers, lakes, wetlands, estuaries and inlets) and all underground water. Under the *Rights in Water and Irrigation Act 1914,* areas of the State are proclaimed for water protection and at present there are 52 groundwater and 22 surface water management areas proclaimed.

7.4.1 Licensing – Proclaimed and Unproclaimed areas

7.4.1.1 Proclaimed Areas

In proclaimed areas under the *Rights in Water and Irrigation Act 1914,* a licence is required to take water from a watercourse or groundwater aquifer. Applications for water licenses are made through the DoW regional offices with conditions are placed on licences to ensure that available water is shared and environment impacts are minimised.

7.4.1.2 Unproclaimed Areas

Water can be taken from watercourses in unproclaimed areas without a licence as long as the flows are not sensibly diminished and downstream users are not adversely affected.

7.4.2 Types of Water Licences and Permits

7.4.2.1 Licences to Take Water Issued Under Section 5C

Under section 5C of the Rights in Water and Irrigation Act, DoW issues licences that grant the right to take water from a specified location, with a maximum allowable volume of water (the water entitlement) to be taken over a 12 month period. Conditions included in the licence outlines the licensee's responsibilities in managing the water resource. Many mining proposals that require borefield or surface water abstraction will need a section 5C water licence. Licensing is required for all artesian bores within the State, non-artesian bores in proclaimed areas and surface water abstractions that are not considered by DoW as being riparian.

7.4.2.2 Licences to Construct or Modify a Bore Issued Under Section 26D

Section 26D of the Rights in Water and Irrigation Act requires licensing of the construction and modification of bores. This includes all artesian bores and non-artesian bores in areas proclaimed under the Rights in Water and Irrigation Act. Certain bores are exempt from licensing, such as domestic and stock water bores on pastoral leases. All groundwater bores associated with a Mining proposal will have to be licensed by DoW.

7.4.2.3 Permits to Obstruct or Interfere with Beds and Banks Issued under Section 17

A section 17 Beds and Banks Permit under the Rights in Water and Irrigation Act is required to obstruct, destroy or interfere with a water course or dam. The section 17 regulation aims to protect the environment and other users of against detrimental interference caused by activities such as the construction of dams or reservoirs, or rail and road crossings. The regional DoW office should be consulted as to whether minor water courses require a section 17 permit.

7.4.3 Transferring Water Entitlements

Water entitlements can be transferred to other parties. The original licensee surrenders the licence to DoW and a new licence is then issued to the new applicant. If only part of the water entitlement is transferred to the applicant, the original licensee's water entitlement will be reduced, while the transferred part of the entitlement issued as a new licence to the applicant. All allocation transfers need to be approved by DoW.

7.4.4 Agreement to Lease a Water Entitlement

The Rights in Water and Irrigation Act provides for a licensee to reach an agreement to temporarily lease part or the whole of the water entitlement to another party. In these cases, the licence is retained by the licensee but is amended to include a notation allowing its use by the other party. Such agreements need to be approved by DoW before they can be implemented.

7.4.5 Dewatering

Under the *Environmental Protection Regulations 1987* (as amended), a Part V licence must be obtained from DEC prior to discharging mine-water, where the total annual volume is 50 000 tonnes or more. For quantities less than this, advice should be sought from DoW (in consultation with DEC) with regard to the possible adverse impacts on water resources and watercourses. De-watering requirements and likely impacts must be detailed in the mining proposal.

Mining de-watering guidelines are available at:
http://portal.water.wa.gov.au/portal/page/portal/WaterQuality/Publications/WQPGuidelines/Content/G11_dewatering.pdf

7.4.6 Mining proposal requirements

Statutory approvals in relation to water allocation, quality and environmental management that are required by DoW under its associated must be evidence the mining proposal. Status updates should be provided for pending licences and permits.

7.4.7 DoW Offices

Information on:

- Statutory water resource approvals for mining operations.
- Water quality management and monitoring requirements.
- Locations of water management areas.
- Guidelines for the approval of groundwater well licences.
- Guidelines for hydrological and groundwater reports.
- Allocation and licensing of water resources.

Contact details for relevant DoW regional offices can be obtained from:

Department of Water
The Atrium
168 St Georges Terrace,
PERTH WA 6000
(PO Box K822 Perth WA 6842)
Website: www.water.gov.au
Phone: (08) 6364 7600
Fax: (08) 6364 7601

7.5 Road Transport Approvals

All public roads and all private roads, to which the public may have access, are covered by the *Road Traffic Act 1974*. Under most circumstances, a mining company's use of such roads requires a permit approved by the Commissioner for Main Roads; otherwise local shire approval is required.

There are four main areas of responsibility which would form the basis of any discussions between the proponent of a mining project and the Main Roads Western Australia (MRWA). These are where the mining project impacts on:

- An existing road reserve.
- A future road alignment.
- Wider network implications of road transport.
- A major water course.

If the mining proposal involves any of these key elements, the proponent should contact MRWA either through the metropolitan office (see below) or through the relevant regional office.

Copies of the relevant MRWA approvals should be included in the mining proposal.

Main Roads Department
Metropolitan Regional Office
Don Aitken Centre
Waterloo Crescent
EAST PERTH WA 6004
Phone: (08) 9323 4638
Fax: (08) 9221 0044
Website: http://www.mainroads.wa.gov.au/NR/mrwa/run/start.asp

7.6 State Agreement Acts

State Agreements generally involve large investment projects which require extra planning and coordination of infrastructure requirements. Where mining is the basis and mining tenements are issued under the Agreement, the tenements will be issued pursuant to the requirements and conditions of the Mining Act unless otherwise determined by the State Agreement.

Proponents of mining projects seeking the support of a State Agreement should contact DoIR to discuss their proposal options:

Department of Industry and Resources
100 Plain Street
EAST PERTH WA 6004
Phone: (08) 9222 3333
Fax: (08) 9222 3862
Website: www.doir.wa.gov.au

7.7 Commonwealth Legislation

Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), assessment and approval is required for actions that are likely to have a significant impact on:

- a matter of national environmental significance.
- the environment of Commonwealth land (even if taken outside Commonwealth land).
- the environment anywhere in the world (if the action is undertaken by the Commonwealth).

Under the EPBC Act, an action includes a project, development, undertaking, activity, or series of activities. When a person proposes to take an action that they believe may need approval under the EPBC Act, they must refer the proposal to the Commonwealth Environment Minister.

7.7.1 Matters of National Environmental Significance (NES)

The Act identifies seven matters of national environmental significance:

- World Heritage properties.
- National heritage places.
- Ramsar wetlands of international significance.
- Threatened species and ecological communities.
- Migratory species.
- Commonwealth marine area.
- Nuclear actions (including uranium mining).

Further information on matters of NES can be found at the Commonwealth's Department of the Environment and Heritage website (http://www.deh.gov.au/epbc/).

7.8 Mining Safety Statutory Requirements

While these guidelines refer to DoIR environmental approvals under the Mining Act, there are statutory approvals relating to occupational safety and health on mining operations that may need to be obtained from DoCEP, either before or during the mining proposal approval process. These approvals relate specifically to the identification and management of hazards and risk associated with the activities of exploration, mining and mineral processing, as well as the storage, transport or handling of any hazardous substances, dangerous goods or radioactive materials. Special DoCEP approvals are also required for the pipeline transport of gas as processing fuel.

Compliance with and approvals under the following legislation may also be required before mining or mineral processing can commence.

- *Mines Safety and Inspection Act 1994*
- *Explosives and Dangerous Goods Act 1961*
- *Radiation Safety Act 1975*
- *Petroleum Pipelines Act 1969*

Under the Mines Safety and Inspection Act, a project management plan must be submitted to the district inspector of mines, and a separate approval by the State Mining Engineer is also required.

While compliance with these laws is the proponent's responsibility, further advice on any approvals required and the application of this legislation to activities identified in the mining proposal is available from:

Resources Safety Division
Department of Consumer and Employment Protection
100 Plain Street
EAST PERTH WA 6004
Phone: (08) 9222 3333
Fax: (08) 9222 3862
Website: www.docep.wa.gov.au

APPENDIX 8
MEMORANDUM OF UNDERSTANDING BETWEEN DOIR AND EPA FOR ONSHORE MINERAL EXPLORATION AND MINING DEVELOPMENT PROPOSALS

A copy of the full MOU is available at:
http://www.doir.wa.gov.au/documents/environment/shed_env_other_onshoreminingMoU2004.pdf

This table below is copied from the MOU and summarises the criteria for referral to the EPA for onshore mineral exploration and mining development proposals. This table should be read in conjunction with MOU.

	Referral criteria	Exploration proposals that result in ground disturbance	Development, productive mining, excess tonnage applications and construction proposals
1	Extracting from an open pit or underground operation greater than 10 million tonnes of material (waste and ore) per annum.	N/A	Refer to EPA
2	Processing of greater than 2 million tonnes of ore per	N/A	Refer to EPA
3	On pre-1899 Crown Grant lands and consequently not subject to the Mining Act 1978	Refer to EPA	Refer to EPA
4	Wholly or partly within a red book area or bush forever site	Native Vegetation Protection Unit to advise DoIR if EPA referral required.	Refer to EPA if proposal is within, or wholly or partly within 2km of the area.
5	Wholly or partly within the following DEC managed areas: National park Nature reserve Conservation park State forest Timber reserve Regional park Proposed DEC reserve DEC pastoral lease Threatened ecological community.	DEC to advise DoIR if EPA referral required.	Refer to EPA if proposal is within, or wholly or partly within 2km of the area.
6	Having a direct or indirect effect upon environmentally significant lakes and wetlands or a declared occupied townsite.	Refer to EPA.	Refer to EPA.
7	Impact to a water resource area, including a water reserve, a declared or proposed water supply catchment area or groundwater protection area	DEC (WRC) to advise DoIR if EPA referral required.	Refer to EPA if proposal is within, or wholly or partly within 2km of a water resource area.
8	Within 2km of the coastline or a Private Conservation Reserve. .	DoIR to assess.	Refer to EPA
9	Wholly or partly within the following sensitive areas: World Heritage Property Biosphere Reserve Heritage Site Soil Reference Site	Refer to EPA.	Refer to EPA if proposal is within, or wholly or partly within 2km of the area.
10	DoIR will use its best judgment, and where necessary seek advice from the EPA Service Unit, to determine whether proposals require referral to the EPA where there is potential for significant impact on areas of outstanding scenic or landscape values (more detailed information is given in section 4.0 of the MOU).	Refer on case by case basis	Refer on case by case basis.

Refer proposal to EPA on advice of another agency/group

Refer proposal to EPA

- For proposals that trigger one or more criteria, but which DoIR consider may only have a marginal impact on the environment, DoIR will consult with the EPA Service Unit to determine whether such proposals require referral to the EPA.
- Proposals that DEC considers may result in a significant impact on: threatened ecological communities; priority listed ecological communities; rare and/or threatened flora or fauna listed under the Wildlife Conservation Act priority listed flora or fauna, remnant rainforest areas or mangroves should be referred to the EPA.
- Including *Environmental Protection Policy* lakes and wetlands, conservation category wetlands, Ramsar wetlands and sites listed under the Japan-Australia Migratory Birds Agreement or the China-Australia Migratory Birds Agreement.

APPENDIX 9
REQUIREMENTS FOR ELECTRONIC SUBMISSION OF MINING PROPOSALS

As an increased number of companies submit electronic copies of mining proposals, the Minerals Environment Division of DoIR has prepared guidelines to standardise and clarify required formats for digital submission. Updated versions of these guidelines can be found on the DoIR website: www.doir.wa.gov.au

These guidelines address the current needs related to data transfer and storage by requiring the submission of data in a standard, widely used format with:

- Reporting text, appendices and related images and maps placed within a single Portable Document Format (PDF).
- Recorded tabular data in a standardised non-proprietary ASCII format.
- Spatial data in ESRI, MapInfo and geo-referenced format.

The submission of digital data is strongly recommended and must be accompanied by the hardcopy report. Digital reports must comply with, and fulfil the specific requirements required under the mining proposal, programme of work and AER guidelines, available from Guidelines and Environmental Notes on the DoIR website at:
http://www.doir.wa.gov.au/environment/D3EDAEF4AF5444B387556F666CCF00A4.asp

The process of digital submission will include the following aspects:

- Generation of report text file.
- Generation of related images.
- Creation of PDF file.
- Generate MapInfo, ESRI and geo-referenced files.
- Generation of tabular ASCII files for environment data which involves the following steps:

    1. Export of standardised tabular data to ASCII format.
    2. Generation of metadata ASCII header using Environmental Data Template (EDT) or similar software (the EDT will be available on the DoIR Website in mid 2006 to convert your data into ASCII format).
    3. Merging of the header and data using EDT or other software.

- Creation of a file verification report containing all file names for textural, spatial and tabular data. Although this document specifically details the set of steps required to complete digital reporting, variations in data types and the style of each report my not require all the steps. However all aspects of file format, metadata capture and file verification creation apply equally when submitting a digital document to DoIR.

9.1 Recommended File Naming Convention

It is recommended that proponents submit digital data using the following file naming convention. The name should contain the prefix DOIRN followed by the project name and operator.

9.1.1 Naming Report files

DOIRN, Mining proposal title, project operator (file extension pdf) (e.g. DOIRN Black Stump Project Waste Dump Extension, Elvis Mining.pdf)

It is recommended that the mining proposal title should be explanatory or descriptive while remaining succinct. If two PDF files are submitted the report file naming convention should be as follows:

*DOIRN, mining proposal title, file number, project operator (file extension pdf) (e.g. DOIRN Black Stump Project Waste Dump File**1** Elvis Mining.pdf)*

All text, appendices and related images should be contained within the single pdf.

9.1.2 Naming Tabular Data

The tabular data files should consist of the following: *DOIRN, mining proposal title, data type (file extension txt) (e.g. DOIRN Black Sump Project Waste Dump Rock Analysis.txt)*

9.2 Acceptable Media and Format

The data will be accepted on the following media:

- 1.44MB 31/2' Floppy disc
- CD, closed session
- DVD +RW or –RW, closed session

The media must be readable in a 32-bit Windows (NT, 2000, XP) platform. The company/individual submitting the data must retain a digital back up copy for at least one year as a precaution against data corruption when data is transferred to DoIR.

9.3 Media Labelling Convention

Media (.i.e. CD/disc) submitted containing the mining proposal digitally data must be labelled clearly on both the disc/CD itself and on the cover with the following details:

- Company name
- Report title
- Report type (e.g. Mining proposal, AER)
- Year

9.4 Data Types

Table 1: Formats accepted for digital data submission.

Data Type	Description	Format	Parameter	Suffix
Report text.	Text, Consultant reports, figures, appendices (maps need to be of original scale).	Portable document format (PDF) with thumb nails.	Replace hard copy. PDF with security to allow copying but no editing of document. Must be readable by Adobe products e.g. Adobe Acrobat Reader.	.pdf
*Maps, plans, figures and photographs (if not embedded in text).	Files of maps, plans and figures.	PDF		.pdf
Geo reference maps and plans.	Maps and plans that have been georeference.	GEOTIFF/TIFF Compressed ER Mapper JPEG	Reproducible at 300dpi, 24 bit. Best quality (Least Lost) Quality as above Preferred co ordinate system GDA 94. If unable to use GDA 94, co-ordinate system must be documented. Local grids will not be accepted.	.tif .ecw .jpg
Tabular data	Point location, ambient air quality, geochemistry.	Delimited ASCII (i.e. TAB delimited).	Flat file rather than relational.	.txt
GIS data	Data in GIS format. i.e. site maps, Spatial fauna and flora investigations..	ESRI shape files MapInfo tab files.	Where possible symbology of GIS data should be provided (e.g. ESRI layer file **LYR** or legend file **AVI** or for MapInfo's workspace file **WOR**.) Preferred co ordinate system GDA 94. If unable to use GDA 94 co-ordinate system must be documented. Local grids will not be accepted.	.shp .tab
*Geophysical and other remote sensing images.	Images derived from remote sensing (e.g. multispectral scanner and orthoimagery).	Compressed PDF		.pdf

* Recommended that images be incorporated into a single pdf with report text.

9.4.1. Report Text

Text, including figures, related maps, images and tables must be submitted in a PDF format with the security settings to allow copy and pasting from the document, however the document remains non editable. The selection of PDF format was based on its wide acceptance, ease of creation, availability of free software to read files and perform word and phase searches. PDF files, when created by software other than Adobe Acrobat, must be able to be read by Adobe products including Adobe Acrobat Reader. To view, search and print PDF files, Adobe Acrobat Reader can be downloaded free of charge from http://www.adobe.com.

It is preferable that the entire Mining proposals (with reports and associated appendices and images) is contained in a single PDF file. If a second PDF file is submitted, it is recommended the second PDF contains appendices and related information (other than text). If multiple PDFs are submitted, each PDF should have a file name clearly explaining the purpose of the PDF within the mining proposal.

When access can not be gained to the appropriate software to create a PDF file, then the report should be supplied in its original electronic format (e.g. Microsoft Word).

In the case of submitting an addendum for a Mining proposal that has been previously assessed and approved, a new PDF only containing the addendum should be submitted. If however addenda/alterations have been requested, or were sent as part of a current assessment of a mining proposal, a new PDF file containing the previous mining proposal documentation and additional addendum and/or alteration must be re-submitted as a single PDF with the word new incorporated in the title as illustrated below. **I**

Initially Submitted PDF

Original digital mining proposal (e.g. DOIRN Black Stump Project Waste Dump Elvis Mining.pdf)

Re-submitted PDF

*New digital MP (e.g. DOIRN **NEW** Black Stump Project Waste Dump Elvis Mining.pdf)*

9.4.2. Maps, Plans, Figures and Photographs (if not Embedded in Report Text)

As mentioned previously, all maps, plans, photographs and figures should be submitted as a single PDF along with the Report Text. If maps, plans, photographs etc are too large to embed within text (such as A1 plans and large aerial photos), they can be submitted as additional PDFs. Additional PDFs should have file names that clearly explain their purpose and role within the mining proposal.

9.4.3. Geo-referenced Maps and Plans

Images such as maps, aerial photography, site plans, land satellite images etc should be geo-referenced. If not, then sufficient information needs to be provided to enable correct spatial registration of images.

File formats to be submitted are JPEG, GEOTIFF, TIFF or ECW.

9.4.4. Tabular Data (for Tables that are not embedded within the Text Report)

Tabular data (Excel spreadsheets etc) should include point location in relation to the information (vegetation surveys, plant names, water bore levels, water quality analysis, air quality surveys, land function analysis etc). Tabular data must be associated with relevant details of analysis and interpretation as described in the *Guidelines for Mining proposals in Western Australia*.

The required file format for tabular data is a flat file rather than a relational file system. This allows flexibility in format while reducing the need for relational keys between files. However some datasets may have to be submitted as a series of related flat files. It is likely that DoIR will develop standard formats for various types of datasets to avoid the problem of submission of a variety of formats for the same information categories.

Tabular data need to be submitted as a tab-delimited ASCII file with the file suffix of .txt. Having tab delimited files compared to comma delimited files stops problems arising from commas that occur within text fields that corrupt numerical data. Tabular data must contain metadata headers (see Section 9.5).

9.4.5. GIS Data

If GIS data is to be received, the preferred formats are ESRI shape files (SHP) and MapInfo tab files (TAB).

Where practical the symbology of the GIS displayed data should be provided (e.g. ESRI's layer files (LYR) or legend file (AVI) or for MapInfo's workspace file (WOR)).

Preferred co ordinate system for GIS data is GDA 94. However, if the GDA 94 co-ordinate system can not be used, then the alternative co-ordinate system must be documented. Local grids will not be accepted.

9.4.6. Geophysical and Other Remote Sensing Images

These images are derived from geophysical surveys and include satellite multi-spectral scanner. Images must be submitted as PDF and included in the report text PDF.

9.5. Metadata as Related to Tabular Data

Metadata can be defined as "data about data" and must provide sufficient information about the dataset in relation to future data searches. Metadata provides descriptive information about content, context and characteristics of data, a common example of metadata is a library catalogue system. The standard recommended by Australia and New Zealand Land Information Council (ANZLIC) for metadata should be used where appropriate. However, certain data require more information for intelligent use, while other data require specific metadata covered under other international standards. Metadata must be presented within a file header at the top of the associated tabular data. Metadata file headers are constructed to present the information by category then by subcategory.

9.6 Verification Listing

When submitting a disk or CD that contains the digital report and data, a one page verification report needs to be submitted. The report contains all file names submitted. Once submitted, a digital report and data becomes part of the legal reporting system. The addition of a verification report listing the files (including file type and format) provides a system whereby the report submitter and DoIR can check that the appropriate files have been submitted. A possible example of a verification report is presented in Table 2.

Table 2: Verification Listing Form

Mining proposal and or Related Data	File Name	Format
Mining proposal report		
*Appendices and maps		
Remote Sensing		
LANDSAT		
SPOT		
Land Disturbance		
Waste dump area		
Vegetation clearing		
Rehabilitation area		
Survey Data		
Water monitoring survey		
Flora and fauna survey		txt

Table 3: Sample Verification Listing

Mining proposal and or Related Data	File Name	Format
Mining proposal Report	DOIRN Black Sump Project Waste Dump Elvis Mining	pdf
*Appendices and maps		
Remote Sensing		
LANDSAT		
SPOT		
Land Disturbance		
Waste dump area		shp
Vegetation clearing	DOIRN Black Sump Project Waste Dump Cleared	
Rehabilitation area		
Survey Data		
Water monitoring survey		
Flora and fauna survey	DOIRN Black Sump Project Waste Dump Flora and Fauna	txt

APPENDIX 10
ENVIRONMENTAL BONDS FOR MINING PROPOSALS

Environmental bonds are intended to give the State recourse to funds so that rehabilitation works can be undertaken to meet the requirements of the environmental conditions placed on a tenement. The bond requirement is placed as a condition on the tenement following assessment of the mining proposal. The mining proposal will not be approved until the bond has been lodged with DoIR.

10.1 Types of Bonds

Two types of bond exist under the Mining Act*:*

- Security (Form 32) – The security is used for low risk Mining proposals with minimal surface impact, where the cost to rehabilitate is estimated to be less than $10,000.
- Unconditional performance bond (UPB) – The UPB is a monetary bond guaranteed by a bank or other approved financial institution for amounts greater than $10,000. Once the assessment of the mining proposal has been completed, the environmental inspector will inform proponents as to whether a security or UPB is required. Information on bond calculation is provided at: http://www.doir.wa.gov.au/documents/environment/ Env_Min_GL_CalculatingEnvPerformanceBonds_Dec06.pdf

10.1.1 Security Bonds

Security bonds are similar to a personal guarantee and no money is required for lodgement. The security is effected by the tenement holder signing the security Form and lodging the form with DoIR. The Form 32 is available at: http://www.doir.wa.gov.au/documents/environment/shed_env_legregform_security.pdf

Security bonds are used for LIMO and other very low impact mining proposals where the initial impact is small and the environmental risk is considered very low. Security bonds range in value from disturbance amounts calculated from $5,000 minimum to $10,000 maximum. For amounts above $10,000 a UPB must be lodged.

10.1.2 Unconditional Performance Bonds

The UPB was implemented following extensive discussions with industry via the Mining Industry Liaison Committee (MILC).

This UPB is a contract between the Minister for State Development and a third party of financial standing acceptable to the Minister, providing for the third party to unconditionally pay the agreed sum to the Minister on his request following the failure of the tenement holder to meet the previously agreed environmental commitments.

The UPB is determined using the area of disturbance information provided in the mining proposal. The amount is calculated using rates from a minimum of $3,000 per hectare for simple rehabilitation on level ground (and low mobilisation costs) to more than $30,000 per hectare for areas with major rehabilitation challenges, or where a full cost recovery bond is deemed as being warranted.

The UPB covers all land disturbed by mining and where rehabilitation is required but with the total amount apportioned over each tenement i.e. separate pro rata bond amount are lodged for each tenement affected by the mining proposal. Common bonded areas include: waste dumps, tailings facilities, stockpile areas, backfilled pits, hardstand areas, plant sites, camp sites, haul roads, hard stand and laydown, areas, airstrips, accommodation areas and the safety zone around any abandoned open pit. Open pit floors and walls will not normally be included as land where rehabilitation is required.

Where operations are expected to progressively expand over the life of the project, the initial bond will be estimated on the basis of the area of land that will be disturbed in the first five years of operation.

The bonds placed on operations will be reviewed annually as part of the annual rehabilitation report system and increased or decreased on the basis of the new areas opened and the old areas where progressive rehabilitation has been successfully undertaken. This process is designed to encourage progressive rehabilitation over the life of the project.

Retirement of the bond will be considered only when the tenement holder has submitted a compliance audit to DoIR for assessment. The audit should detail which conditions have been complied with and whether all commitments in the mining proposal have been carried out. Partial bond release may be recommended if the majority of the rehabilitation earthworks have been completed and have demonstrated stability under a range of conditions.

DoIR will then prepare a final assessment report on the environmental management and rehabilitation undertaken on the tenement before recommending to the Minister that the UPB is retired.

The various types of UPB (each one reflecting the relevant, underlying land tenure (e.g. leases, licences, reserved lands, etc) are available on the DoIR website under Mineral and Environment Forms at:
http://www.doir.wa.gov.au/environment/EAD6667A61ED43E4896DE753CBC7F0B0.asp

APPENDIX 11
ANZMEC & MCA OBJECTIVES AND PRINCIPLES OF MINE CLOSURE

Stakeholder involvement

Objective

To enable all stakeholders to have their interest considered during the mine closure process.

Principles

1. Identification of stakeholders and interested parties is an important part of the closure process.
2. Effective consultation is an inclusive process which encompasses all parties and should occur throughout the life of the mine.
3. A targeted communication strategy should reflect the needs of the stakeholder groups and interested parties.
4. Adequate resources should be allocated to ensure the effectiveness of the consultation process.
5. Wherever practical, work with communities to manage the potential impacts of mine closure.

Planning

Objective

To ensure the process of closure occurs in an orderly, cost-effective and timely manner.

Principles

1. Mine closure should be integral to the whole of mine life plan.
2. A risk based approach to planning should reduce both cost and uncertainty.
3. Closure plans should be developed to reflect the status of the project or operation
4. Closure planning is requires to ensure that closure is technically, economically and sociably feasible.
5. The dynamic nature of closure planning requires regular and critical review to reflect changing circumstances.

Financial provision

Objective

To ensure the cost of closure is adequately represented in company accounts and that the community is not left with the liability. *Principles*

1. A cost estimate for closure should be developed from the closure plan.
2. Closure cost estimates should be reviewed regularly to reflect changing circumstances.
3. The financial provision for closure should reflect the real cost.
4. Accepted accounting standards should be the basis for the financial provision.
5. Adequate securities should protect the community from closure liabilities.

Implementation

Objective

To ensure there is clear accountability, and adequate resources, for the implementation of the closure plan.

Principles

1. The accountability of resourcing and implementing the closure plan should be clearly identified.
2. Adequate resources must be provided to assure conformance with the closure plan.
3. The on-going management and monitoring requirements after closure should be assessed and adequately provided for.
4. A closure business plan provides the basis for implementing the closure plan.
5. The implementation of the closure plan should reflect the status of the operation.

Standards

Objective

To establish a set of indicators that will demonstrate the successful completion of the closure process.

Principles

1. Legislation should provide a broad regulatory framework for the closure process.
2. It is in the interests of stakeholders to develop standards that are both acceptable and achievable.
3. Completion criteria are specific to the mine being closed, and should reflect its unique set of environmental, social and economic circumstances.
4. An agreed set of indicators should be developed to demonstrate successful rehabilitation of a site.
5. Targeted research will assist both government and industry in making better and more informed decisions.

Relinquishment

Objective

To reach a point where the company has met agreed completion criteria to the satisfaction of the responsible authority.

Principles

1. A responsible authority should be identified and held accountable to make the final decision on accepting closure.
2. Once the completion criteria have been met, the company may relinquish their interest.
3. Records of the history of a closed site should be preserved to facilitate future land use planning. The full document can be found at: http://www.doir.wa.gov.au/documents/environment/Shed_env_guide_closure.pdf