



# CODE OF PRACTICE FOR MINERAL EXPLORATION

Standards, procedures and practical guidance under the  
*Mineral Resources (Sustainable Development) Act 1990*

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Published by the Department of Economic Development, Jobs, Transport and Resources (DEDJTR).

Earth Resources Regulation, November 2014

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Authorised by the Department of Economic Development, Jobs, Transport and Resources (DEDJTR)

121 Exhibition Street, Melbourne 3000.

ISBN 978-1-74146-761-1 (Print)

ISBN 978-1-74199-849-8 (Web)

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# CONTENTS

<b>Abbreviations</b>	<b>2</b>	18. Air emissions, dust and lighting	23
<b>Part A Introduction</b>	<b>3</b>	19. Livestock, domestic animals and crops	24
1. Earth Resources Regulation	3	20. Geophysical and geochemical surveys and gridlines	25
2. Legislative framework	3	21. Explosives	26
3. Purpose of the code of practice	4	22. Roads	27
4. How to use the code of practice	4	23. Drill sites, costeans, trenches and bulk sampling excavations	29
<b>Part B Minerals Exploration</b>	<b>5</b>	24. Drill hole operation, construction and decommissioning	30
1. Exploration	5	25. Underground exploration	33
2. Reconnaissance Activities	6	26. Rehabilitation	33
3. Low Impact Exploration	6	27. Reporting, monitoring and auditing	35
<b>Part C Licence conditions, compliance, recommended practice and advice</b>	<b>9</b>	28. Documentation and records	36
1. General Conditions	9	<b>Earth Resources Regulation Contacts</b>	<b>37</b>
2. Administrative arrangements	10	Operations districts	37
3. Community engagement	11	Contact details for Managers, Operations	37
4. Native vegetation and fauna	12	<b>Definitions</b>	<b>38</b>
5. Box-Ironbark region	13	<b>References</b>	<b>42</b>
6. Public liability insurance	14	<b>Appendices</b>	<b>44</b>
7. Public safety zones	14	Appendix 1: Relevant legislation and policies	44
8. Soil management	14	Appendix 2: Description of typical exploration activities	48
9. Plant diseases, weeds and pest animals	15	Appendix 3: Low Impact Exploration Assessment Checklist	50
10. Water quality and aquatic habitat	16	Appendix 4: Box-Ironbark region	51
11. Fuels, lubricants and hazardous material	17	Appendix 5: Environmental incident recording pro forma	52
12. Aboriginal cultural heritage	18	Appendix 6: Environmental monitoring pro forma	53
13. Heritage	19	Appendix 7: Complaints recording pro forma	54
14. Fire precautions	20	Appendix 8: Rehabilitation pro forma	56
15. Waste and redundant equipment	21	Appendix 8 (cont.): Rehabilitation pro forma notes to user	58
16. Camping	22		
17. Noise	22		

# ABBREVIATIONS

AS	Australian Standards
AH Act	<i>Aboriginal Heritage Act 2006</i>
Biodiversity assessment guidelines	<i>Permitted clearing of native Vegetation- Biodiversity assessment guidelines (DEPI 2013)</i>
CHMP	Cultural Heritage Management Plan
Clth	Commonwealth
CFA	Country Fire Authority
DEDJTR	Department of Economic Development, Jobs, Transport and Resources, Victoria
DELWP	Department of Environment, Land, Water and Planning, Victoria
EPA	Environment Protection Authority, Victoria
EP Act	<i>Environment Protection Act 1970</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ERR	Earth Resources Regulation (within DEDJTR)
EVC	Ecological Vegetation Class
FFG Act	<i>Flora and Fauna Guarantee Act 1988</i>
HV	Heritage Victoria
MRS Act	<i>Mineral Resources (Sustainable Development) Act 1990</i>
MRSDMI Regulations	<i>Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2013</i>
OAAV	Office of Aboriginal Affairs Victoria
OHS Act	<i>Occupational Health and Safety Act 2004</i>
PEM	Protocol for Environmental Management
PSZ	Public Safety Zones
RAP	Registered Aboriginal Party
SEPP	State Environmental Protection Policy

In Victoria mineral exploration and mining activities are regulated under the *Mineral Resources (Sustainable Development) Act 1990* (MRSD Act). The purpose of the MRSD Act is to encourage an economically viable mining industry which makes the best use of mineral resources in a way that is compatible with the economic, social and environmental objectives of the State.

The Code of Practice for Mineral Exploration (the code) provides practical guidance about how exploration work should be conducted in Victoria to meet regulatory requirements and environmental standards under the MRSD Act or the *Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2013* (MRSDMI Regulations). It is based on the principle that well-planned and managed exploration projects should have little or no lasting impact on the environment and impose minimal disruption to other land users and the community.

In February 2014, the *Mineral Resources (Sustainable Development) Amendment Bill* was passed that introduced a new, impact based definition of Low Impact Exploration. The code has been updated to reflect these changes.

Since 2010, the Victorian Government has initiated a moratorium on hydraulic fracturing, new exploration licences and approval of exploration drilling activities for coal seam gas until at least July 2015. Licensees wishing to explore for coal seam gas should consult their local Earth Resources Regulation inspector for current advice.

The code has been developed in accordance with the requirements of section 89A of the MRSD Act. The code will be regularly reviewed to incorporate advances in technology, new environmental information, public submissions, field and administration experience, as well as changes in legislation and policy.

## 1. EARTH RESOURCES REGULATION

Within the Department of Economic Development, Jobs, Transport and Resources (DEDJTR), Earth Resources Regulation (ERR) regulates the mineral, extractive, petroleum, pipeline, greenhouse gas storage and geothermal industries in Victoria and off-shore Victorian waters. It provides a consistent and transparent tenement management regime, together with environmental standards, monitoring and enforcement that ensure these industries comply with their obligations and meet community expectations.

ERR regulates the minerals industry through the administration of the MRSD Act and subordinate legislation. ERR's regulatory role is principally the assessment of applications, issuing of licences, approval of works and inspection of operations. In addition, ERR also provides advice to proponents on how to meet their obligations under the MRSD Act.

## 2. LEGISLATIVE FRAMEWORK

The code applies to all Crown and private land within the State of Victoria where exploration activities are permitted under prospecting, exploration, retention or mining licences. It does not cover petroleum or geothermal exploration, nor address the geological/technical reporting requirements of the MRSD Act.

Prior to carrying out any exploration activities on land, mineral explorers are required to hold a prospecting, exploration, retention or mining licence. All exploration activities, except for low impact exploration require an approved work plan (standard or area) under the MRSD Act. The MRSDMI Regulations specify the obligations relating to licences and work plans, such as applications, operations and information requirements.



Licensees may also be required to hold approvals under other laws and policies prior to undertaking any exploration activities on land. Such laws and policies may include the *Flora and Fauna Guarantee Act 1988*, the *Wildlife Act 1975*, the *Heritage Act 1995*, the *Aboriginal Heritage Act 2006* (AH Act), the *Water Act 1989* and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Where applicable, the code provides information in relation to the requirements of related laws and policies. However, the code does not address the requirements under the *Native Title Act 1993* (NTA) or the associated *Indigenous Land Use Agreements* (ILUAs)<sup>1</sup>. Refer to Appendix 1 for more information.

The code does not replace other related laws and to the extent that there is a conflict between the code and other related laws, the laws will prevail.

### 3. PURPOSE OF THE CODE OF PRACTICE

The purpose of the code is to provide practical guidance (recommended practice) on how to comply with standard licence conditions attached to a prospecting, exploration, retention or mining licence. For guidance in relation to complying with site specific licence conditions consult with the ERR district manager.

The code encourages licensees to adopt a proactive and exemplary approach to compliance, and promotes exploration practices that prevent or minimise impacts on the environment, community and other land users.

### 4. HOW TO USE THE CODE OF PRACTICE

At time of publishing, the code lists the current standard licence conditions for all exploration activities conducted under a new exploration or retention licence. Similar standard conditions appear on prospecting and mining licences. Standard licence conditions may vary to reflect current legislation and policy and licensees should be familiar with the conditions imposed on their licences, as compliance with standard licence conditions is required under the MRSD Act. The code can be used by explorers, contractors and consultants to help them comply with the standard licence conditions.

Explorers should familiarise themselves with the recommended practice in relation to each licence condition. However, it is recognised that there are many methods and practices suitable in achieving compliance and explorers should keep up to date with leading best practices and new technologies within the industry. Licensees, who adopt alternative methods and practices must be able to demonstrate that the alternative methods and practices comply with the standard licence conditions.

The code is primarily for use by mineral explorers; it will also provide useful information about mineral exploration to a range of other stakeholders, such as community members (including landowners / occupiers), environment groups, contractors and consultants.

Mineral explorers may use the code to:

- > understand and comply with the standard exploration licence conditions under the MRSD Act.
- > undertake appropriate planning and allocation of budgets.

Community members and environment groups may use the code to:

- > understand the legislative framework that governs community and environmental issues for mineral exploration.
- > understand compliance requirements for mineral explorers.
- > enhance their capacity to engage about mineral exploration projects.

Contractors may use the code to understand the compliance requirements and recommended practices for mineral exploration when undertaking works on land within an exploration, mining, retention or prospecting licence.

Consultants may use the code to:

- > understand compliance requirements for mineral explorers.
- > enhance their delivery of services to the mineral exploration industry.
- > undertake appropriate planning and allocation of budgets.

<sup>1</sup>Information on these issues is provided in the guidelines: *Information regarding the Processing of Mineral and Petroleum Tenements under the Native Title Act 1993*, DPI, 2011.

The MRSD Act defines the terms 'exploration' and 'low impact exploration' as the search for minerals. The term reconnaissance activities has been introduced to define a suite of non-ground disturbing, low impact exploration activities that can occur on the granting of a licence (see section 2. *Reconnaissance Activities* below).

Under section 40 of the MRSD Act, a licensee wishing to do work under a licence is required to lodge a work plan with the Department Head, unless the work falls within the definition of low impact exploration. Instead, licensees wishing to undertake low impact exploration activities are required to adhere to all standard licence conditions and comply with the code.

## 1. EXPLORATION

Under the MRSD Act, **exploration** means exploration for minerals and includes:

- a) conducting geological, geophysical and geochemical surveys; and
- b) drilling; and
- c) taking samples for the purposes of chemical or other analysis; and
- d) extracting minerals from land, other than for the purpose of producing them commercially; and
- e) in relation to an exploration licence, anything else (except mining) that is specified in the licence.

Exploration as defined in the MRSD Act may be conducted under a prospecting, exploration, retention or mining licence.

The search for minerals covers a wide range of activities from desk-top literature reviews and surveys to costeans and drilling programs. The purpose of undertaking exploration activities is to prove an economically demonstrable resource. Exploration activities have the potential to generate impacts on people (communities) and the environment, with the impacts increasing as exploration programs progress to more targeted investigations.

The following lists some potential exploration activities and potential impacts. Refer to Appendix 2 for more information about typical exploration activities.

Exploration activities may include:

- > Research and review of geological data including previous licence holders' results
- > Construction of access tracks, camps and other infrastructure
- > Geological mapping
- > Broad-scale and aerial geophysical surveys
- > Local-scale geophysics, geochemistry and hand sampling
- > Reconnaissance drilling and auger sampling
- > Close-spaced drilling of target sites

Potential impacts from exploration activities may include:

- > Clearing of vegetation
- > Disturbance to fauna
- > Soil erosion and stream sedimentation
- > Spreading of weeds
- > Increased noise, light and dust levels
- > Disturbance to culturally significant sites
- > Disruption to other land users, such as farmers and the local community
- > Injury to, or detrimental effects on, the health and wellbeing of employees, other persons at work and the public
- > Contamination of soil and water

## 2. RECONNAISSANCE ACTIVITIES

Once a licence is granted, reconnaissance exploration activities can commence to enable the licensee to better define exploration targets. Reconnaissance activities are any exploration activity that does not involve:

- > the use of equipment (other than non-mechanical hand tools) to excavate; or
- > the use of explosives; or
- > the removal or damaging of any tree or shrub.

Such activities include:

- > geological mapping; and
- > geochemical sampling (rock chip, soil and stream sediment sampling using non-mechanical hand-held tools); and
- > non ground intrusive geophysical surveys; and
- > airborne geophysical surveys.

These activities do not require an approved work plan, and can be carried out provided the required public liability insurance and consents are in place. On private land, consent to undertake reconnaissance exploration activities (as described above) requires the licensee to obtain either written consent or informed verbal consent of the owners and/or occupiers of the affected land (for more information see the guideline *Minerals Exploration and Mining in Victoria – Landholder Information Booklet* on the Energy and Earth Resources website ([www.energyandresources.vic.gov.au/earth-resources/information-for-community-and-landholders/mining-and-extractives](http://www.energyandresources.vic.gov.au/earth-resources/information-for-community-and-landholders/mining-and-extractives))).

## 3. LOW IMPACT EXPLORATION

The meaning of low impact exploration has been revised to a risk based definition that considers the level of environmental impact rather than the use of mechanical equipment. Low impact exploration activities have low social and environmental impacts and may include the drilling for core samples, the construction of tracks, and the limited removal of certain native vegetation. A work plan is not required for these activities, however, the licensee is required to adhere to all standard licence conditions and comply with the code.

Licence holders wishing to conduct low impact exploration must ensure that the required public liability insurance, bond and land owner consents are in place. On private land, consent to undertake low impact exploration activities requires the licensee to obtain written consent of the owners and/or occupiers of the affected land. Informed verbal consent is not permitted for low impact exploration activities which include ground disturbing work or the removal of native vegetation.

It is the responsibility of the licensee to determine if their proposed exploration falls within the definition of low impact exploration or not and therefore whether a work plan is required prior to undertaking the works. When applying the definition of low impact exploration, the licence holder must be able to demonstrate that they comply with all of the clauses in the definition.

**If the licence holder carries out work other than reconnaissance activities and cannot demonstrate that their activities fall within the definition of low impact exploration they will be required to cease work and obtain an approved work plan prior to recommencing.**

Under the MRSD Act, **low impact exploration** means exploration that does not involve any of the following:

- a) the use of explosives;
- b) the taking of flora listed under section 10 or Schedule 2 of the *Flora and Fauna Guarantee Act 1988*, unless that flora is taken from private land that is not owned by a public authority;
- c) the taking of flora from a community listed under section 10 or Schedule 2 of the *Flora and Fauna Guarantee Act 1988*, unless that community is found on private land that is not owned by a public authority;
- d) the taking of fauna listed under section 10 or Schedule 2 of the *Flora and Fauna Guarantee Act 1988*;
- e) the taking of any taxon or community of flora or fauna from any habitat or parts of habitat under section 20 of the *Flora and Fauna Guarantee Act 1988*;
- f) the removal or damaging of more than 1 hectare of native vegetation if that area does not contain any native trees during either the term of the licence or a period of 5 years from the grant of the licence, whichever ends first;
- g) the removal or damaging of more than 15 native trees that have a trunk diameter of less than 40 cm at a height of 1.3 metres above ground level during either the term of the licence or a period of 5 years from the grant of the licence, whichever ends first;
- h) the removal or damaging of more than 5 native trees that have a trunk diameter of 40 cm or more at a height of 1.3 metres above ground level during either the term of the licence or a period of 5 years from the grant of the licence, whichever ends first;
- i) the creation of any road, structure or hardstand area without the consent of the owner or occupier of the land on which it is created;





- j) the use of any closed road without the consent of the owner or occupier of the land on which the road is located or undertaking works on any road without the consent of the owner or occupier of the land on which the road is located;
- k) ground intrusive work that:
  - i. is within 200 metres of a waterway; or
  - ii. is on a slope steeper than 1 vertical : 3 horizontal; or
  - iii. is of greater than 2 hectares in an area of cultural heritage sensitivity during either the term of the licence or a period of 5 years from the grant of the licence, whichever ends first; or
  - iv. involves taking water from an aquifer, hydraulic fracturing, or excavation using heavy earth moving equipment.

## EXPLANATORY DETAILS

The information below has been developed to assist in determining whether an exploration activity is low impact.

## FLORA AND FAUNA GUARANTEE ACT 1988

Under the *Flora and Fauna Guarantee Act 1988* (FFG Act) and the *Wildlife Act 1975*, **take** means to kill, injure, disturb or collect.

It should be noted that driving off road in areas where protected flora and fauna are identified would also constitute take and would therefore not be allowed without a permit under the FFG Act.

To assist in determining if the exploration activity is likely to affect listed threatened flora or fauna communities, taxon or critical habitat, please refer to the Department of Environment, Land, Water and Planning (DELWP) Biodiversity Interactive Mapping system or DEDJTR's GeoVic system ([www.energyandresources.vic.gov.au/earth-resources/exploration-and-mining/tools-and-resources/geovic](http://www.energyandresources.vic.gov.au/earth-resources/exploration-and-mining/tools-and-resources/geovic)).

If the exploration area is located on or near an area where listed threatened flora, communities, fauna, taxon or critical habitat are located please contact your local DELWP office for more information.

## REMOVAL OF NATIVE VEGETATION

**Native vegetation** means plants indigenous to Victoria including trees, shrubs, herbs and grasses. **Native trees** means trees indigenous to Victoria.

To ensure compliance with the definition of low impact exploration the licence holder must keep records of native vegetation clearing. These records must also be made available to DEDJTR or DELWP officers on request and the cumulative area of native vegetation clearing must be reported on an annual basis to DEDJTR (Appendix 6).

If the licensee reaches the thresholds listed in the definition of low impact exploration they must submit a work plan to DEDJTR for approval prior to any further damage or removal of native vegetation.

## WORK ON CLOSED OR EXISTING ROADS

The use of closed roads\* or undertaking work on existing roads\* will require the consent of the owner or occupier of the land. The licensee will be responsible for determining the owner or occupier of the land by searching the VicRoads Register of Public Roads or the relevant local Council's Register of Public Roads. The licensee is also responsible for documenting the consent of the owner or occupier of the land prior to undertaking any work under the definition of low impact exploration.

\* See *Definitions section*

## GROUND INTRUSIVE WORK

**Ground intrusive work** means work that disturbs the topsoil or surface rock layer of the ground by machinery (other than hand-held machinery) in the course of drilling a hole, ground levelling, or augering.

**Heavy Earth moving equipment** means equipment exceeding two tonnes tare weight (such as bulldozers, excavators and graders) that are used for excavating and moving quantities of earth. Smaller earth moving equipment, such as bobcats and ditch witches, are not considered to be heavy earthmoving equipment.

For assistance in determining if the area of ground intrusive work is greater than 200 metres from a waterway or in an area of Cultural Heritage Sensitivity the licensee should consult DEDJTR's GeoVic system. ([www.energyandresources.vic.gov.au/earth-resources/exploration-and-mining/tools-and-resources/geovic](http://www.energyandresources.vic.gov.au/earth-resources/exploration-and-mining/tools-and-resources/geovic)).

*Please note:* The GeoVic system is a snapshot generated from Victorian Government data. The system may be of assistance in determining whether activities can be considered low impact exploration or not, however it cannot be guaranteed that the data is without flaw. Licensees accessing the system should make appropriate enquiries to assess the currency of the data and contact their relevant ERR inspector if confirmation is required.

Alternatively, licensees can access the Office of Aboriginal Affairs website for further information on assessing whether proposed works will be occurring within an area of Cultural Heritage Sensitivity ([www.dpc.vic.gov.au/index.php/aboriginal-affairs/aboriginal-affairs-overview](http://www.dpc.vic.gov.au/index.php/aboriginal-affairs/aboriginal-affairs-overview)).

If the area of ground intrusive work is in an area of **Cultural Heritage Sensitivity** the licensee must keep records of the extent of all ground intrusive work, which must be made available to an ERR inspector and any Authorised Officer under the *Aboriginal Heritage Act 2006* on request.

The cumulative area of ground disturbing work within an area of Cultural Heritage Sensitivity must be reported on an annual basis to DEDJTR (Appendix 6). If the area of ground disturbing work within an area of Cultural Heritage Sensitivity reaches 2 hectares the licensee must apply to DEDJTR for a work plan prior to any further ground disturbing work occurring. Exceeding 2 hectares of ground disturbing work in an area of Cultural Heritage Sensitivity would also trigger the need for a Cultural Heritage Management Plan.

Any ground intrusive work that involves dewatering an aquifer, the use of hydraulic fracturing\* or the use of heavy earth moving equipment (such as costeaning, bulk sampling or underground sumps) is not considered to be low impact exploration and will require an approved work plan.

\* See *Definitions section*

## DETERMINING WHEN AN ACTIVITY IS LOW IMPACT

Once the licensee can demonstrate that the exploration activity complies with the clauses in the definition, the activity may be considered low impact. A checklist to assist operators in assessing whether or not activities qualify as low impact is located in Appendix 3.

The licensee will then be required to notify the Crown land manager of any work involving the removal or damaging of native vegetation or ground intrusive work that is to be conducted on Crown land. The licensee is also required to notify DEDJTR of any work involving the removal or damaging of native vegetation or ground intrusive work under new standard condition provisions. Notification to commence removal or damaging of native vegetation or ground intrusive work under the provisions of low impact exploration must include:

- > Start date, and
- > Proposed ground intrusive work, and/or
- > Proposed removal or damaging of native vegetation, and
- > Location.

This notification may be in the form of email, fax or letter. Notification for reconnaissance activities (as described above, under the heading Reconnaissance Activities') is not required.

# LICENCE CONDITIONS, COMPLIANCE, RECOMMENDED PRACTICE AND ADVICE

## C

The exploration licence conditions in the code are the standard conditions that will be attached to all exploration licences and relevant prospecting, retention and mining licences. These conditions apply to all exploration activities including low impact exploration activities. Under the MRSD Act, non-compliance with exploration licence conditions, or any site-specific conditions applied to a particular licence or work plan, is a breach of the Act.

On private land and some categories of Crown land (for example, restricted Crown land), the consent of the private landowner / occupier or Crown land manager is required before exploration may be undertaken. In these situations, additional site-specific conditions over and above those presented in the code, may be applied to any prospecting, exploration, retention or mining licence.

The recommended practice guides licensees in complying with exploration licence conditions. A licensee may choose not to follow recommended practice, but must still comply with all exploration licence conditions, including any site-specific conditions not covered by this code.

Licensees are liable to enforcement action if standard licence conditions are not met. Compliance with licence conditions is monitored by ERR inspectors. Licensees must ensure that any staff and contractors are familiar with, and observe, their licence conditions applicable to the exploration project or activities.

The standard conditions imposed on new licences issued at the time of publishing the code are listed below together with guidance on applying them to proposed activities. However, it is recommended that site-specific licences be referred to as compliance will be assessed on the conditions appearing on the licence.

## 1. GENERAL CONDITIONS

General conditions appear on a licence at the beginning of the Schedule of Conditions and may cover any general requirements for undertaking exploration activities.

### Exploration licence conditions

- 1 The licensee must not undertake, cause or allow the undertaking of any exploration for coal seam gas without the express consent of the Executive Director Earth Resources Regulation.
- 2 The program of work submitted with the licence application must be completed, in accordance with any schedule included in that program of work.
- 3 The program of work, including scheduling, may only be varied with the agreement of the Minister. This does not apply if the variation only involves work which is additional to that described in the program of work.
- 4 During the term of the licence, the Minister may request updated details of the proposed program of work to be provided by a specified date. The licensee holder must comply with any such request.

## 2. ADMINISTRATIVE ARRANGEMENTS

Open communication and transparency with all stakeholders will assist in the operation of exploration projects and ensure that administrative matters progress in a timely manner. It is important that the relevant ERR district manager, Crown land managers and local council are familiar with the exploration operation and are kept up to date with variations to the program.

### Exploration licence conditions

- 5 The licensee must ensure that the relevant ERR district manager is at all times aware of the appropriate contact person for activities conducted under an exploration licence.
- 6 Where work is approved by an area work plan, the licensee must submit a written work schedule for any program of work. The work schedule must be submitted to the relevant ERR district manager and the Crown land manager (for work on Crown land) at least twenty-one (21) days prior to the commencement of work. The licensee must comply with any request by the relevant ERR district manager to defer, cease or modify the proposed works.
- 7 Prior to commencing ground intrusive work or work involving the removal or damaging of native vegetation under the definition of low impact exploration the licensee must submit a rehabilitation bond to the satisfaction of the Minister
- 8 Where ground intrusive work or work involving the removal or damaging of native vegetation is carried out under the definition of low impact exploration the licensee must notify the Crown land manager (for works on Crown land) and the relevant ERR district manager at least 7 days prior to the commencement of work. Notification must include:
  - > Start date, and
  - > Proposed ground intrusive work, and/or
  - > Proposed removal or damaging of native vegetation, and
  - > Location.

### Recommended practice

- > Upon the granting of a licence, the licensee should notify the Executive Director ERR and the relevant ERR district manager, in writing, of the name, telephone number and location of a contact person for exploration and rehabilitation activities carried out under a licence. On-ground exploration work should not commence until this notification has been provided. Further advice should be provided if at any time the contact person is changed.
- > An up-to-date directory of any relevant contacts and commitments for exploration activities approved under a work plan should be maintained by the licensee, including all relevant consents, permits, compensation agreements, conditions and notification requirements. The directory should also include the contact details of the relevant ERR inspector, Crown land managers and private landowners / occupiers, and also explain how and when they should be contacted.

### Communication related to standard and area work plans

- > Where work is approved on Crown land by a standard work plan, the licensee should inform the relevant Crown land manager, of the proposed works and duration, in writing, at least seven (7) days prior to commencing work.
- > Where work other than low impact exploration is proposed, the licensee should consult with the relevant land management officer prior to work commencing.
- > The submission of a work schedule prior to commencing works (as described in licence condition 6) should be accompanied by a work schedule and any other information necessary to identify the activity and location for review. Where either department (DEDJTR or DELWP) identifies a significant issue that appears not to be addressed adequately by the area work plan, the licensee should meet with the departments and seek to define appropriate changes to the proposed work to resolve the problem.



### 3. COMMUNITY ENGAGEMENT

Relevant communities should be engaged at an early stage of an exploration project. Maintaining open and transparent communication is essential to good working relationships between explorers and the community to ensure the effective management of any impacts.

The word community is a broad term used to define groups of people, whether they are stakeholders, interest groups or citizen groups. The community may surround a geographic location (community of place), be a community of similar interest (community of practice) or have a special interest or legal interest in the land (community of standing).

Under section 39 of the MRSD Act, all licensees have a *duty to consult* with the community throughout the period of the licence. This involves sharing information about any authorised activities that may affect the community and giving members of the community a reasonable opportunity to express their views about those activities. The type and level of consultation needed depends on the complexity of the project, the potential risks and who may be affected.

Good consultation includes:

- > Identifying relevant stakeholders including community, government authorities and employees.
- > Identifying the potential impacts of exploration activities on relevant stakeholders.
- > Establishing clear, open and ongoing channels of communication with all relevant stakeholders and ensuring they are aware of any real and potential impacts.
- > Responding to stakeholder concerns in a timely, transparent and effective manner.
- > Establishing stakeholder feedback mechanisms and demonstrating how feedback contributes to decision making.
- > Respecting the rights, cultural beliefs and concerns of all parties having an interest in the land (and waters) within and surrounding the exploration project area.
- > Enlisting local knowledge and relevant authorities in the design of the exploration works.



Further information about consultation processes is provided in the following guidelines:

- > Australian Government Department of Industry, Tourism and Resources, Leading Practice Sustainable Development Program for the Mining Industry (2006) *Community Engagement and Development*.
- > Department of Sustainability and Environment (2005) *Effective Community Engagement Workbook and Tools: Version 3*.
- > Minerals Council of Australia Victoria Division (2006) *Community Consultation Toolkit – A good practice Guide for Victorian Explorers and Miners*.
- > Ministerial Council on Mineral and Petroleum Resources (2005) *Principles for Engagement with Communities and Stakeholders*.

#### Exploration licence conditions

- 9 The licensee must identify their communities for the proposed operation and consult with the identified communities.

#### Recommended practice

- > A process to identify your communities should be established and may comprise a consultation plan that describes how you will consult with your communities (local residents and interest groups, local council and state government). Information on how to identify communities and the requirements for the duty to consult is provided in: Department of Primary Industries (2008) *Community Engagement Guidelines for Mining and Exploration in Victoria*.
- > The licensee should inform the chief executive of the municipalities within the licence area of the proposed works and estimated duration, in writing, at least seven (7) days prior to commencing work under an approved work plan and provide further information as appropriate during the term of the licence.
- > Records of community engagement activities should be maintained by the licensee as a source of evidence to demonstrate compliance with the conditions. These records should include the type of engagement used, distribution method (for example, registered post or internet), the exploration activity at issue, a list of stakeholders involved and stakeholder feedback.
- > Using thorough record keeping, a licensee should be able to demonstrate how community concerns and input have contributed to decision making during the exploration project.
- > The licensee should establish and maintain a complaints register. The register should contain details of the nature of any complaints received, including the date of the complaint and details of the complainant, as well as actions taken to resolve each particular issue.

## 4. NATIVE VEGETATION AND FAUNA

Exploration activities occurring in accordance with the definition of low impact exploration (see Part B) will not require a permit to damage or remove native vegetation and the following does not apply.

In recognition of extensive vegetation clearing during Victoria's past, the State Government has put in place measures to conserve fauna and remaining native vegetation. When planning exploration, impacts on native vegetation should be avoided or minimised.

Any proposals for the clearing of native vegetation (including dead standing timber) will be assessed by DELWP in accordance with the requirements of the *Flora and Fauna Guarantee Act 1988* (FFG Act) and the *Biodiversity assessment guidelines* through the work plan process.

Approval to clear native vegetation may require permits under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Destroying, damaging or disturbing any of the following on public land requires a permit under the FFG Act:

- a) native flora listed under section 10 or on schedule 2 of the FFG Act;
- b) native flora from communities listed under section 10 or on schedule 2 of the FFG Act;
- c) any taxon or community of flora or fauna from any habitat or parts of habitat declared as critical habitat under section 20 of the FFG Act.

All other activities on public land that result in the destruction, damage or disturbance of flora declared to be protected by order of the Governor-in-Council require a permit.

Note that driving off road in areas identified as containing species listed under the FFG Act would be considered destroying, damaging or disturbing and would require a permit.

The destruction or injury of native wildlife on public or private land requires a permit under the *Wildlife Act 1975*.

### Exploration licence condition

- 10 The licensee must take all reasonable measures to avoid and minimise and/or offset the removal and disturbance of native vegetation and faunal habitats.

### Recommended practice

- > Licensees should seek the advice of an ERR inspector and DELWP about how to address FFG Act and Biodiversity assessment guideline requirements early in the planning of an exploration project.
- > Licensees should seek the advice of the Australian Department of the Environment about how to address EPBC Act issues early in the planning of an exploration project.
- > On Crown land, the Crown land manager should be consulted about appropriate management practices prior to preparing and submitting a work plan with DEDJTR for activities other than low impact.
- > Prior to commencing work, explorers should consult DELWP's Victorian Biodiversity Atlas and Biodiversity Interactive Map to identify occurrences of native flora or fauna and communities listed under section 10 or on schedule 2 of the FFG Act and/or areas declared as critical habitat under section 20 of the FFG Act. On-ground flora and / or fauna surveys may be required if works are to be undertaken in areas where such species and/or communities are known to occur. These should be undertaken at the time of year that is appropriate for the species concerned. (website: [www.delwp.vic.gov.au](http://www.delwp.vic.gov.au))
- > If works could potentially result in damage or disturbance of native flora or communities listed under section 10 or on schedule 2 and/or habitat or parts of habitat declared under section 20 of the FFG Act, the licensee should contact the local DELWP office to discuss their options. In some cases the licensee may need to apply to DELWP for a FFG Act permit.



- > If works could potentially result in the destruction of or injury to native wildlife on public or private land, the licensee should contact the local DELWP office to discuss their options. In some cases the licensee may need to apply to DELWP for a permit under the *Wildlife Act 1975*.
  - Licensees may be required to consider temporary relocation of habitat that is mobile such as hollow logs and other large, dead or fallen trees for replacement during rehabilitation.
  - Constraints may be placed on the time of removal of native vegetation to allow flowering or seed set, ensure sufficient viable seed stock for revegetation, or to avoid disturbing specific fauna species and their habitats at particular times of the year.
- > On Crown land, the Crown land manager may authorise a third party to harvest merchantable timber, or the licensee may be liable for royalties, fees and charges payable for merchantable timber. Standing trees may be assessed for merchantable timber.
- > The design and planning of operational procedures should minimise impacts. Issues to consider are:
  - Activities near sensitive habitat or animals (for example, seismic surveys and noisy exploration activities).
  - Buffers between work sites and areas identified for protection. The advice of the land manager should be obtained about the width of the buffer.
  - Threatened flora and fauna sites and habitats should be clearly marked and protected.
  - Movement of people or machinery to avoid native vegetation as far as possible.
  - Avoid operating in wet and/or boggy conditions.
  - Avoid the construction of new tracks (use existing routes, where possible).
  - Instead of felling, trees can be trimmed to provide access for vehicles or machinery.
  - Where trees are approved for felling, cut trees at a height approximately equal to the diameter of the tree to facilitate coppicing, dependent on species, instead of uprooting.
  - Move cut timber to one side of the track to allow for salvage.
  - Trees should only be felled by suitably qualified personnel.
  - Where standing trees are required to be removed for exploration purposes, the licensee should give at least twenty-one (21) days' notice to either the Crown land manager or the private landowner / occupier, in accordance with this code.
  - The blazing or permanent marking of trees is not permitted.
  - Position survey markers to reduce the need for clearing vegetation.
  - Use biodegradable flagging tape if semi-permanent marking is required. Vegetation removal may only take place after written consent is obtained from the private landowner / occupier or Crown land manager.
  - Use minimum impact or small size equipment.
  - Hours of operation and the disturbance of lighting on fauna.

## 5. BOX-IRONBARK REGION

Victoria's most significant gold mineralisation occurs in the Box-Ironbark region. This region contains areas that are of high nature conservation and cultural heritage value, incorporating Aboriginal archaeological sites and places, as well as 19th century goldfields sites and landscapes. This region has been extensively cleared and the remaining ecosystem contains a large number of threatened species.

Mineral exploration on Crown land in the Box-Ironbark region of the state must comply with the government-approved recommendations set out in the Box-Ironbark Forests & Woodlands Investigation (ECC 2001), in addition to the other conditions specified in the code.

The recommendations (Appendix 4) affect approximately 384,000 hectares of Victorian Crown land and 43,000 hectares of Commonwealth land. The report and accompanying maps are located on the Victorian Environmental Assessment Council website ([www.veac.vic.gov.au](http://www.veac.vic.gov.au)).

While most of the principles outlined by the investigation are applied through the code to all land categories, those exclusive to the Box-Ironbark region of the state are identified where relevant.

### Exploration licence condition

- 11 Where activities are proposed to be undertaken in a Box-Ironbark region, the licensee must undertake a preliminary assessment of vegetation and faunal habitats of areas of interest in that Box-Ironbark region to identify and mark areas or sites to be avoided in the exploration project.

### Recommended practice

- > The assessment of the vegetation and faunal habitat in the Box-Ironbark region should be undertaken by a suitably qualified and experienced person.
- > Flora and fauna surveys should be undertaken at appropriate times of year, as advised by the Crown land manager.

## 6. PUBLIC LIABILITY INSURANCE

You must be insured under a policy of public liability insurance in respect of doing work under a licence, for an amount of at least \$10 million. Working without public liability insurance will incur an infringement penalty. The insurance policy must not exclude any work activity that is authorised by the approved work plan or the licence.

### Exploration licence condition

- 12 Prior to commencing any work, the licensee must have public liability insurance that covers all work authorised under the licence and ensure the insurance is valid at all times while work occurs under the licence.

## 7. PUBLIC SAFETY ZONES

The licensee must also comply with the *Safety on Public Land Act 2004*. This Act provides for the establishment and enforcement of Public Safety Zones (PSZs) in state forest. PSZs have a finite life and may be declared for a range of reasons including flora and fauna conservation and timber harvesting operations. Licensees are permitted to explore in PSZs under certain provisions, such as ensuring their works do not interfere with or hinder timber harvest activities. The location and coordinates of PSZs should be periodically checked. They are published in the *Victoria Government Gazette* – [www.gazette.vic.gov.au](http://www.gazette.vic.gov.au). Alternatively, licensees can contact the local DELWP office for information on the location of PSZs.

### Exploration licence condition

- 13 The licensee must take all reasonable measures to minimise their impact on the operation of a Public Safety Zone

### Recommended practice

- > Before commencing exploration in PSZs, the licensee should consult and make prior arrangements with the relevant Crown land manager.
- > Where the licensee is aware of PSZs, the site manager should be informed about their locations and be provided with a list of any conditions relevant to undertaking exploration in the PSZs. Upon request, the list should be made available to an ERR inspector.

## 8. SOIL MANAGEMENT

The management of soil is a crucial factor in the maintenance of healthy landscapes. Exploration may occur on agricultural land and maintaining soil structure will ensure future productivity. Soil structure decline and erosion can occur from soil disturbance and heavy machinery, resulting in increased sedimentation in nearby waterways. The removal of vegetation can alter the soil structure and promote erosion. Erosion, the loss of nutrients and soil salinity are major land degradation issues in Victoria. By maintaining good soil management, rehabilitation costs will be minimised.

### Exploration licence condition

- 14 The licensee must take all reasonable measures to minimise impacts on the physical and biological health of soil.

### Recommended practice

- > Where possible, use existing roads and tracks for vehicles and heavy machinery.
- > Align stockpiles parallel to the slope contour in stable heaps away from drainage lines and sources of pollution.
- > When excavation is required, the soil strata and associated organic matter (leaf litter and humus) should be maintained in individual stockpiles.
- > Avoid stockpiling or spreading spoil on native vegetation.
- > Replace stockpiled soil in original order as soon as possible. Prompt replacement of topsoil improves rehabilitation due to the minimisation in the decline in soil fertility, seed viability and microbial activity.
- > Keep stockpiles less than 2m high.
- > Soil should not be imported onto a site unless approved by an ERR inspector and with permission from the private landowner / occupier, or relevant Crown land manager.
- > For longer term stockpiles, install drainage measures to prevent erosion (such as table drains uphill of the stockpile), and drainage through large soil stockpiles.



## 9. PLANT DISEASES, WEEDS AND PEST ANIMALS

Plant diseases, weeds and pest animals can destroy native plants and permanently reduce the productivity of the land. The movement of machinery is a major factor in the spread of weeds and soil diseases in Victoria. Through daily routines, landowners may inadvertently spread weeds and soil diseases from paddock to paddock as well as to roadsides. This risk has increased with the use of contracted equipment and the vast distances travelled between jobs.

Each year, the number of noxious and environmental weed infestations identified in Victoria increases. Often, the only plausible explanation is the movement of contaminated machinery and equipment.

Soil pathogens and plant diseases can seriously destroy wildlife habitats such as tree canopy and shrub layers. In turn, this can reduce breeding, feeding and shelter sites for many fauna species. Plant diseases can stem from pathogens in soil and gravel, as well as airborne pathogens.

Introduced species can be major pests and pose a serious threat to native animals, plants and habitats. Their potential to damage not only cultural and historic sites but also the environment and the economy is great.

The main state legislation relating to weeds and pest animals is the *Catchment and Land Protection Act 1994*. Importing soil from interstate sources or restricted areas within Victoria can only be undertaken in accordance with the *Plant Biosecurity Act 2010* and *Plant Biosecurity Regulations 2012*. Legislation and regulation over some categories of land (particularly Crown land) also precludes activities such as the introduction of soil, seeds and plants.

### Exploration licence conditions

- 15 The licensee must ensure that all soil that is imported into the exploration licence area is free of disease and noxious weeds.
- 16 The licensee must take all reasonable measures to minimise the spread of noxious weeds, pest animals and plant diseases whilst undertaking exploration activities.
- 17 The licensees must adhere to any biosecurity protocols that have been adopted on private or Crown land.

### Recommended practice

- > The Crown land manager or private landowner / occupier and DELWP should be consulted about any weed, pest animal or plant disease management issues in the intended work area.
- > Material imported for construction (for example, hardstands, drill pads, tracks and roads) should be sourced from 'clean' pits and be free from soil pathogens and noxious weed seeds or any other part of a noxious weed that is capable of growing.
- > Soil used for rehabilitation should not contain noxious weed seeds or any other part of a noxious weed that is capable of growing diseases or pathogens.
- > All vehicles, plant, machinery, hand tools and work boots should be thoroughly cleaned prior to moving to a new site or location. Earthmoving equipment should be washed prior to entering work sites on private land or Crown land.
- > Prior to moving vehicles and equipment (including hand tools and work boots) between areas, thoroughly remove / clean all soil and organic matter. During the cleaning process, the undersides of vehicles will require particular attention.
- > Wash downs / cleaning should be done in purpose-built facilities. A licensee should assess the need for temporary mobile facilities to be brought on site.
- > Equipment moved from areas of known noxious weeds or diseases (e.g. *Phytophthora cinnamomi*), may need to be disinfected. Disinfectants should not be applied in the vicinity of waterways.
- > Information on biosecurity protocols can be found under Agriculture and Food on DEDJTR's website ([www.economicdevelopment.vic.gov.au](http://www.economicdevelopment.vic.gov.au)).



## 10. WATER QUALITY AND AQUATIC HABITAT

In Victoria, water is a valuable asset and should be protected and conserved. Water environments range from small mountain streams to large lowland rivers, billabongs, lakes, estuaries and coastal waters. High quality water and healthy waterways are essential to sustain human reliance on this resource. Water is the basis of prosperity within diverse industries including agriculture, manufacturing, fishing, tourism and mining.

Licensees should consult with the Crown land manager, private landowner / occupier, Catchment Management Authority and Water Corporation when conducting activities in waterways, on stream banks or stream beds.

### Exploration licence conditions

- 18 The licensee must design, install and maintain erosion and sediment controls to prevent erosion of areas of disturbed land and sedimentation of waterways.
- 19 Where exploration activities are being conducted in waters or on the banks of waterways with water in them, the licensee must take all reasonable measures to minimise sedimentation of the waterway.
- 20 The licensee must take all reasonable measures to prevent contaminated runoff from entering receiving waterways.

### Recommended practice

#### Buffer zones

- > Exploration work should be located so that a sufficient buffer is maintained to prevent direct runoff into waterways. Factors to be taken into account when determining appropriate buffer widths, and applying other waterway protection measures, include:
  - the intensity and magnitude of exploration works;
  - the size of the waterway;
  - soil characteristics;
  - potential for sedimentation;
  - topography;
  - rainfall and proximity to water supply take-off points;
  - other requirements set out in Special Area (water supply catchments) Plans under the *Catchment and Land Protection Act 1994*.
- > Buffers should be established in accordance with the requirements of either the Crown land manager, or the private landowner / occupier and, as a minimum, in accordance with the requirements of the *Code of Practice for Timber Production (2007)*.
- > Machinery, stockpiles of soil and any other exploration infrastructure should be excluded from buffer zones.



#### Discharge and runoff

- > Any water or wastewater discharge should comply with the *Environment Protection Act 1970* and the State Environment Protection Policy (SEPP): Waters of Victoria (2003).
- > Overland stormwater flow should be diverted around work sites using measures such as cut-off trenches, and kept free from pollutants, including silt and clay.
- > Diversion works should not cause undue alteration to the general drainage pattern beyond the works area.
- > Runoff from work sites including roads, campsites and ablution areas should be minimised and treated if necessary.
- > Stream crossings should be designed, located and constructed to prevent the discharge of road surface runoff and sidecast materials.
- > Use environmentally benign (non-toxic) drilling fluids.

#### Sediment control

- > Based on a risk assessment, sediment control structures should be installed on the downstream side of disturbed areas, to prevent sediment entering waterways.
- > Appropriate measures should be undertaken to avoid disturbance to the bed and banks of the stream and vegetation at all times.

#### Stream crossing

- > Stream crossings require approval under the *Water Act 1989*. Permits for construction of stream crossings must be obtained from the relevant Catchment Management Authority.

## 11. FUELS, LUBRICANTS AND HAZARDOUS MATERIAL

Fuels, lubricants and hazardous materials can have both immediate and long-term adverse effects on the environment. They can be dangerous, or even deadly, to wildlife and humans.

During exploration activities, fuels, lubricants and hazardous material may be used for varied purposes.

The storage, handling and transportation of fuels, lubricants and hazardous materials must be in accordance with:

- > *The Dangerous Goods Act 1985;*
- > *Dangerous Goods (Storage and Handling) Regulations 2013;*
- > *Code of Practice for the Storage and Handling of Dangerous Goods 2013;*
- > *Occupational Health and Safety Regulations 2007;*
- > *Hazardous Substances (Code of Practice No. 24 2000);*
- > *Environment Protection Act 1970;*
- > *Environment Protection (Industrial Waste Resource) Regulations 2009.*

### Exploration licence conditions

- 21 The licensee must take all reasonable measures to prevent contamination of the environment by the release of fuels, lubricants and hazardous materials.
- 22 The licensee must ensure that spills of hazardous materials are cleaned up as quickly as practicable. Such spillage must not be cleaned up by hosing, sweeping or otherwise releasing such contaminant into waterways.
- 23 Within the Box Ironbark region, the licensee must install trays or similar apparatus beneath machinery to protect the soil and vegetation from oil / fuel leaks or spills.

### Recommended practice

- > On Crown land, the Crown land manager should be consulted about the storage of fuels and lubricants.
- > Every effort should be made to minimise the risk and impact of spills or leaks. These may arise from the use, refuelling, servicing and repair of equipment and mobile fuel storage tanks. To do this:
  - Install trays, thick plastic mats or similar apparatus beneath stationary machinery to protect the soil from oil or fuel leaks or spills. Spill trays should be immediately installed if there is any potential for, or evidence of, leakage.
  - Other than emergency repairs, or essential maintenance of stationary equipment, such as a drill rig, maintenance and servicing of mobile equipment should be avoided on work sites.
  - Refuelling, servicing and repair of equipment near environmentally sensitive areas such as waterways, should be avoided.
  - Ensure that appropriate clean-up equipment is readily accessible during refuelling of mobile equipment.
  - Maintain a supply of oil-absorbent material at the work site such as saw dust to clean up spills.
  - Treat and contain spills of even a minor nature with absorbent material. If using hay bales, material should be seed free (straw).
  - Ensure that drainage from areas where hydrocarbon spillage may occur (such as a machinery maintenance area), is directed through a sump or interceptor trap and is free from hydrocarbon contamination.
- > The storage of fuels and lubricants at exploration sites should be within an impervious lined bunded area with a volume of at least 125% of the volume of the fuel and lubricants stored.
  - Bund heights should be at least 150mm.
  - Bunded areas should be drained to a sump if the volume of hydrocarbons exceeds 1200L.
- > Prevent water used in drilling operations from flowing into waterways.
- > Locate, maintain and monitor pipelines to prevent uncontrolled discharge.
- > In most circumstances, fuels, lubricants and hazardous material should be stored separately off the ground on pallets or mobile sump platforms to maintain the integrity of the containers and to make leaks and spills visible.

## 12. ABORIGINAL CULTURAL HERITAGE

The *Aboriginal Heritage Act 2006* (the AH Act)\* protects places and objects of Aboriginal cultural heritage significance in Victoria. The Office of Aboriginal Affairs Victoria (OAAV) maintains a register of recorded Aboriginal places and objects under this Act. A feature of the AH Act, is the requirement for licensees to prepare Cultural Heritage Management Plans (CHMPs) when proposing to carry out listed high impact activities (under the AH Act) in areas of cultural heritage sensitivity. Also introduced through the AH Act is the recognition of Aboriginal people as decision makers when they become a Registered Aboriginal Party (RAP) under the AH Act. Where a RAP exists, the RAP must approve the CHMP for it to be valid.

*\*At time of publishing, the AH Act is currently under review.*

**It is an offence under the AH Act to knowingly, recklessly or negligently undertake an action that harms or is likely to harm an Aboriginal place or object without a Cultural Heritage Permit or an approved Cultural Heritage Management Plan in place.**

When a licence is granted, the licensee is provided with a list of locations of known Aboriginal heritage places, areas of cultural heritage sensitivity and any conditions required by OAAV. In some circumstances, a licensee may need to engage a cultural heritage advisor (usually an archaeologist) to conduct a survey and prepare a CHMP prior to undertaking certain exploration works.

Additional conditions under the *Native Title Act 1993* may apply to Aboriginal places and objects with Aboriginal heritage significance on Crown land subject to Native Title.

**In relation to Aboriginal cultural heritage, the provisions listed below are requirements of the AH Act. These requirements are mandatory and no other method of compliance is available.**

Under the AH Act:

- > Exploration work such as mechanical excavation of drilling pads, mechanical road construction and mechanical trenching, is regarded as a high impact activity that causes significant ground disturbance. If these exploration works are planned within a listed area of cultural heritage sensitivity, a CHMP must be prepared before a work plan approval can be obtained from DEDJTR. A suitably qualified cultural heritage advisor, independent of the licensee, must prepare a CHMP.
- > A voluntary CHMP may be undertaken at any time before commencing exploration works. A voluntary CHMP may be useful to manage the risk of harm to Aboriginal places within the exploration area. By undertaking a voluntary CHMP, future work plan variations may be processed in a more timely manner.
- > The discovery of Aboriginal cultural heritage during the course of exploration work must be reported as soon as practicable to OAAV, unless there is reasonable cause to believe the heritage is recorded on the Aboriginal Heritage Register.

- > Where the continuation of work could harm Aboriginal heritage, work must cease until advice has been obtained from OAAV, unless the work is subject to a CHMP under the AH Act. If you have completed a CHMP for your project, it will contain contingencies that relate to the discovery of Aboriginal cultural heritage that must be followed.
- > Where no CHMP has been prepared and Aboriginal heritage is located, works that will harm or are likely to harm that heritage must cease and the discovery must be reported to OAAV. In these cases for works to continue either a Cultural Heritage Permit must be obtained or CHMP must be prepared.
- > If any suspected human remains are discovered, they must be reported to the State Coroner's Office immediately by contacting 1300 309 519. A forensic anthropologist will assess the report of human remains and determine whether Victoria Police must be contacted (if human remains are determined to be non-Aboriginal), or whether OAAV must be contacted (if the human remains are believed to be Aboriginal).

### Exploration licence conditions

- 24 The licensee must ensure Aboriginal cultural heritage is not harmed as a result of works undertaken within the licence area.
- 25 Within areas where ground intrusive exploration works or the removal of native vegetation are proposed on Crown land in the Box-Ironbark Region, an assessment of Aboriginal cultural heritage values must be undertaken.

### Recommended practice

#### **Before exploration works**

- > Information on how to decide if a CHMP is required and how to commence this process is provided on the OAAV website: [www.dpc.vic.gov.au/index.php/aboriginal-affairs/aboriginal-affairs-overview](http://www.dpc.vic.gov.au/index.php/aboriginal-affairs/aboriginal-affairs-overview)

#### **During exploration works**

- > If in doubt as to the location of a registered Aboriginal place and any potential impact of exploration activities, refer to the information provided by OAAV.
- > The location of Aboriginal cultural heritage that may be affected by exploration activities within the area of the licence should be provided to the site manager and be made available to an ERR inspector on request.



### 13. HERITAGE

Places and objects considered to be of non-indigenous cultural heritage significance to the State of Victoria are protected under the *Heritage Act 1995* (Heritage Act). Heritage Victoria (HV) maintains a statutory register, the Victorian Heritage Register, of the sites and administers this Act.

It is an offence under Section 127 (1) of the Heritage Act to knowingly or negligently deface or damage or otherwise interfere with an archaeological relic or carry out an act likely to endanger an archaeological relic without the appropriate consent (Section 129 of the Heritage Act).

When a licence is granted, the licensee is provided with a list of locations of known heritage sites and required actions or approvals by HV. In some circumstances, a licensee may need to engage an archaeologist to conduct a survey prior to undertaking exploration works.

**In relation to heritage, the provisions listed below are requirements of the Heritage Act. These requirements are mandatory and no other method of compliance is available.**

The requirements for conducting exploration in areas of potential heritage significance are set out in the guidelines Management of Heritage Sites & Mineral Exploration (HV & DPI, 2002).

Under the Heritage Act:

- > Consent of the Director, HV must be received to explore on sites of cultural heritage significance.
- > The discovery of a cultural heritage site or object during the course of exploration must be reported as soon as practicable to HV.
- > Where the continuation of work could compromise the integrity of the site or object, the work must cease until advice has been obtained from HV.

#### Exploration licence conditions

- 26 The licensee must ensure non-indigenous cultural heritage is not harmed as a result of works undertaken within the licence area.
- 27 Within areas where ground intrusive exploration works or the removal of native vegetation are proposed on Crown land in the Box-Ironbark Region, an assessment of non-indigenous cultural heritage values must be undertaken.

#### Recommended practice

- > If in doubt as to the location of a heritage site and any potential impact of exploration activities, HV should be consulted prior to commencing work.
- > The location of a relic or artefact, archaeological, historic or cultural site that may be affected by exploration activities within the area of the licence, should be provided to the site manager and be made available to an ERR inspector on request.
- > The scope of any assessment about historic cultural values should be determined in consultation with the Crown land manager, HV and DEDJTR.
- > Where directed by the Crown land manager, the assessment should be undertaken by a suitably qualified and experienced person, independent of the licensee.

## 14. FIRE PRECAUTIONS

Fire has been an integral part of the Australian landscape and can have major effects on both human and animal lives, the diversity of plant species as well as property and infrastructure.

The use of fire, other than for cooking or warmth is prohibited on Crown land. All fire bans, regulations and directions from Country Fire Authority (CFA) and DELWP officers must be observed. As exploration usually occurs in remote areas, it is essential to regularly update fire response and readiness plans, document fire ban days and provide this information to the site manager, as well as make it available to the ERR inspector on request.

Victoria has adopted a national system of Fire Danger Ratings. On days of the most extreme fire weather a Code Red Fire Danger Rating may be determined, and parks and forests within the affected fire weather districts will be closed. Mineral exploration is not permitted on Code Red days. If a licensee is already in the field when a Code Red day is announced, the licensee should leave the night before or early in the morning.

The use of fire is prohibited on days of Total Fire Ban. The CFA has produced a list of banned activities on fire ban days (see [www.cfa.vic.gov.au](http://www.cfa.vic.gov.au)).

The relevant regulations to be observed on Crown land in relation to fire are the:

- > *Forests (Fire Protection) Regulations 2014*; and
- > *Occupational Health and Safety Act 2004*.

### Exploration licence conditions

- 28 The licensee must take all reasonable measures to prevent the ignition and spread of fire.
- 29 Prior to undertaking any exploration activities, the licensee must develop and implement a fire response and readiness plan.

### Recommended practice

#### **Fire response and readiness**

- > Each site should have a relevant and up-to-date fire response and readiness plan.
- > The licensee should ensure that the site manager and field crew are constantly informed and fully trained about local fire hazard conditions, fire susceptibility and emergency procedures.
- > Field crew should be up to date with current training in fire-fighting techniques and the use of fire-fighting equipment.
- > Dedicated fire-fighting equipment should be fitted to all exploration vehicles and machinery. This includes fire extinguishers, approved knap-sack spray pumps and rake-hoes.
- > Appropriate fire-fighting equipment should be maintained at the work site.

#### **Fire precautions and vehicle maintenance**

- > During dry periods, vehicles using unleaded petrol should not be used in hazardous areas, such as areas with long grass. These vehicles have catalytic converters that operate at high temperatures and can ignite fires in dry grass or understorey.
- > Internal-combustion engines should be fitted with exhaust pipes, mufflers and spark arresters. Maintenance should occur regularly.
- > The undersides of vehicles should be periodically checked and kept free of vegetation debris, which could dry out and ignite. Frequency of inspections should increase during periods of high fire danger.
- > Store flammable materials such as waste hydrocarbons away from ignition sources.
- > Remove flammable waste from the works area as soon as possible.
- > Organise exploration activities to minimise the risk of fire escape.
- > Where sources of heating are required, only those authorised by the Crown land manager or private landowner / occupier should be used.

#### **Fire hazards and fire ban days**

- > It is advisable to avoid programming exploration activities during periods of likely extreme weather (including high fire danger periods).
- > Bushfires may start in or enter forests and parks from adjacent land. The licensee is advised to monitor local radio, DELWP website ([www.delwp.vic.gov.au](http://www.delwp.vic.gov.au)), the CFA website ([www.cfa.vic.gov.au](http://www.cfa.vic.gov.au)) or call the Victorian Bushfire Information Line on 1800 240 667 for information.
- > Check local fire hazard conditions or fire susceptibility with local CFA or DELWP fire officers prior to commencing, and at appropriate intervals during, exploration activities.
- > DELWP and Parks Victoria undertake a significant program of planned burning throughout the year. The licensee is advised to make timely contact for information on any planned burning operations. To find out when and where planned burns are happening visit [www.delwp.vic.gov.au](http://www.delwp.vic.gov.au) or call the Victorian Bushfire Information Line on 1800 240 667.
- > It is the responsibility of the licensee to be aware of the location of fire-protected areas and whether fire bans and associated conditions are in force.
- > The licensee should ensure that employees, contractors and all other personnel on site are aware of the location of fire-protected areas and whether fire bans and associated conditions are in force.

## 15. WASTE AND REDUNDANT EQUIPMENT

Exploration works may generate all types of waste including municipal, commercial / industrial and prescribed wastes that should be managed to avoid environmental impact. The best form of waste management is to avoid generating it in the first place. Where waste cannot be avoided, opportunities to reuse and recycle the waste should be explored before considering treatment or disposal. The application of the wastes hierarchy as outlined in the *Environment Protection Act 1970* (EP Act) provides a preference for waste management options. By using the waste hierarchy, exploration operations may be able to identify the potential to save money where wastes are avoided, reused or sold as a resource.

The waste hierarchy outlines principles for waste minimisation. These are listed below in order of preference:

- a) Avoidance.
- b) Reuse.
- c) Recycling.
- d) Recovery of energy.
- e) Treatment.
- f) Containment.
- g) Disposal.

### Exploration licence condition

- 30 The licensee must ensure all waste generated on site is disposed of at an appropriate waste management facility.

### Recommended practice

- > All waste generated on site should be sent to an appropriate EPA licensed waste management facility such as a landfill or waste treatment facility. EPA policies relating to the disposal and classification of waste are available on their website: [www.epa.vic.gov.au/your-environment/waste](http://www.epa.vic.gov.au/your-environment/waste)
- > Licensees should minimise the production of waste wherever possible. Waste should be managed in accordance with the waste hierarchy, established under the EP Act.
- > All waste should be stored, transported and disposed of to appropriate licensed facilities in accordance with the EP Act and, in relation to radioactive waste, the *Radiation Act 2005*.
- > Ensure that no littering occurs at work sites.
- > Provide work sites and camps with covered waste receptacles.
- > Store food or food scraps to ensure that animals are not attracted to the site.
- > Recyclable waste should be segregated and dispatched to an appropriate facility.
- > Where site occupation is prolonged, periodic waste removal may be required.
- > Remove all waste at the completion of an exploration operation.
- > Once use is completed all redundant and / or waste equipment, such as electrical cables, foils, probes, flagging tape (including biodegradable) and any other materials should be removed from the licence area.
- > Waste fuel, oil and lubricants, soil contaminated by spills, used absorbent material, impervious linings and any waste contaminated by hydrocarbons (such as rags and grease cartridges) should be treated and disposed of appropriately, in accordance with the EP Act, and the *Environment Protection (Industrial Waste Resource) Regulations 2009*.
- > Store prescribed waste separately to any other waste on site.

## 16. CAMPING

Exploration is often conducted in remote areas resulting in crews requiring the creation of accommodation and associated facilities known as camping areas. The need for camping areas should always be assessed against the sustainability of locating crews in established settlements and towns nearby, where the necessary conveniences already exist. This will limit the impact of exploration in the remote areas and the ecological footprint of the activity.

The layout of a campsite should be carefully considered and planned to limit environmental impact. Living and work areas should be clearly removed from fuel storage areas and vehicle access. Respect for private and public property and the requirements of the private landowner / occupier and the Crown land manager are crucial in the establishment of a campsite.

### Exploration licence conditions

- 31 The licensee may only establish campsites with the permission of the Crown land manager or private landowner / occupier.
- 32 The licensee must select, establish and manage campsites to minimise risks to the environment and / or the health and safety of people.

### Recommended practice

#### **Establishment of campsites**

- > Consult the Crown land manager or private landowner / occupier about the location of camps, camping restrictions and the use or construction of infrastructure.
- > Locate campsites at least 100m from any stream. Manage water usage and drainage from campsites to minimise environmental impacts.
- > Campsite disturbance should be kept to a minimum.
- > Standing dead timber and living timber should not be cut for firewood.

#### **Wastewater disposal**

- > The installation and maintenance of EPA-approved wastewater treatment systems with a designed hydraulic loading of up to 5000L per day, are managed by municipal Councils. For volumes in excess of 5000L per day, an EPA Works Approval will be required.
- > Councils can only issue a permit for a system that has been approved by the EPA for use in Victoria. The system should observe the requirements of EPA Victoria's *Guidelines for environmental management*. Code of Practice Onsite Wastewater Management (2013) and be located on a suitable site. A fee can be charged by the Council for issuing a permit for the wastewater treatment system.

- > Disposal of domestic wastewater from campsites and long-term work sites should be in accordance with the requirements of the EP Act, and relevant local government authority permits.
- > Effluent disposal should comply with relevant health regulations. The environmental health officer of the responsible authority should be consulted about effluent disposal.
- > Stored wastes should be transferred to a facility able to accept the wastewater.

#### **Firewood and camp fires**

- > Consult with the private landowner / occupier or Crown land manager regarding possible restrictions on firewood collection. In some conservation reserves, and within national parks, firewood collection is not permitted.
- > On Crown land, the establishment of camp fires should comply with the *Forests (Fire Protection) Regulations 2014* and / or regulations specific to the Crown land on which the exploration activity is conducted.
- > Camp fires and portable stoves must not be used on Total Fire Ban days.
- > Licensees should consider alternatives to collection of timber on Crown land such as the use of gas stoves or bringing in firewood from sustainable sources.

## 17. NOISE

Significant noise can be generated from motorised and other mechanical equipment including:

- > Drilling machinery
- > Heavy transport
- > Compressors and power generators
- > The detonation of explosive charges.

Noise above background levels may also be generated from campsites, especially at night. Licensees should locate and manage exploration works to ensure that any nearby residents, land users and faunal habitats are protected against nuisance noise, as outlined in the State Environment Protection Policy (SEPP) and that operations are conducted during acceptable hours.

### Exploration licence conditions

- 33 Within the licensed area, the licensee must ensure that noise generated by exploration activities does not exceed limits set by the Environment Protection Authority, Victoria and the local council.
- 34 The licensee must take all reasonable measures to avoid causing nuisance noise.



### Recommended practice

- > Operating hours must be in line with any approved work plan.
- > Noise limits for rural areas are specified in the EPA Publication: Noise from industry in regional Victoria (NIRV) (2011).
- > Noise emissions from exploration work sites and associated facilities, must comply with limits set in the relevant SEPP (Control of Noise from Commerce, Industry and Trade) No. N-1 (1989).
- > Noise emissions must be restricted to times that will not unduly annoy or disturb others in the area.
- > Exposure to noise in and around sites should be managed in accordance with requirements of the OHS Act and the EP Act.
- > Appropriate measures for minimising noise levels include:
- > Using low noise equipment to eliminate the noise at the source.
- > Ensuring equipment is used in accordance with manufacturer's instructions and is properly maintained.
- > Utilising existing features as noise barriers, or constructing noise barriers or acoustic shields around noisy equipment or along noise transmission paths as required.
- > Regularly maintaining fans to minimise bearing noise.
- > Using rubber mats under drill rods.
- > Fitting mufflers to mechanical equipment, where appropriate.
- > 'Residential' mufflers may be required near sensitive locations.
- > Prior to undertaking noisy exploration activities near built-up areas or recreational camping areas (for instance, within 100m), consult residents about the activities and potential amenity issues.
- > Conduct noisy activities during the day time, as defined in the SEPP (Control of Noise from Commerce Industry and Trade) No. N-1 (1989).
- > Consult with relevant municipalities and private landowners / occupiers and Crown land managers prior to the use of low-flying aircraft or helicopters. Avoid disturbing livestock with low-flying aircraft.

## 18. AIR EMISSIONS, DUST AND LIGHTING

Potential air emissions from exploration activities include windblown dust from disturbed land, stockpiles and access tracks, drilling and combustion emissions from machinery. Light from operational activities can also cause annoyance. Source control is the most cost-effective method for managing air emissions. When considering management techniques, exploration operations will also need to identify the nearest receptors that may be impacted and alternative techniques available to address the issues. These alternatives may require further approvals. For example, a water extraction licence under the *Water Act 1989* may be required in order to use water for dust suppression.

### Recommended practice

- > Dust control measures may include:
- > Keeping disturbed areas to a minimum, and revegetating bare areas as soon as possible.
- > Minimising vehicle movements and reducing speed.
- > Utilising recycled or reclaimed water to spray unsealed roads and disturbed areas.
- > Postponing work in unfavourable conditions.
- > Installing dust-control equipment (for example, fitting bag filters or a cyclone to dust generating equipment).
- > Drilling rigs and other machinery should be regularly maintained to reduce combustion emissions.
- > The SEPP (Air Quality Management), EP Act as well as EPA's Protocol for Environmental Management (PEM) – Air quality for mining and extractive industries provides information about how to model, measure and manage air emissions.
- > Directional lighting should be used for exploration activities. Lighting should be kept to the minimum for safe operation in order to avoid impacting nearby residents and disturbing faunal habitats.

### Exploration licence condition

- 35 The licensee must take all reasonable measures to prevent adverse impacts as a result of the release of dust, odour and / or emission of light.

## 19. LIVESTOCK, DOMESTIC ANIMALS AND CROPS

Exploration activities can occur in agricultural areas comprising livestock or crops. Movement on roads through neighbouring properties may be required. You must seek permission from the landowner / occupier to enter property, even if you are only passing through gates to get to another property. Most gates are designed to control livestock and it is important that they remain as found and are not damaged.

**Domestic animals (dogs and cats) are forbidden on work sites under the *Occupational Health and Safety Act 2004*.**

### Exploration licence condition

36 The licensee must take all reasonable measures to prevent adverse impacts to livestock<sup>2</sup> and crops.

### Recommended practice

- > Ensure livestock disturbance, noise, access and exclusion areas as well as rehabilitation issues are addressed in the compensation agreement to the satisfaction of the landowner / occupier.
- > Gates should be left as found, or as directed by the landowner / occupier, including areas under Crown land grazing licences.
- > Temporary fencing should be installed around work sites, where appropriate, to avoid risk to livestock.
- > Ensure that stock have access to water.
- > The landowner / occupier should be informed immediately if any damage to fencing or gates occurs. Repairs should be undertaken in consultation with the landowner / occupier as soon as possible or appropriate compensation provided.
- > Stock access to sites undergoing rehabilitation should be prevented.
- > Determine if apiary sites are located within the exploration area and contact the owner or Crown land manager to ensure apiary sites are not impacted from exploration activities.



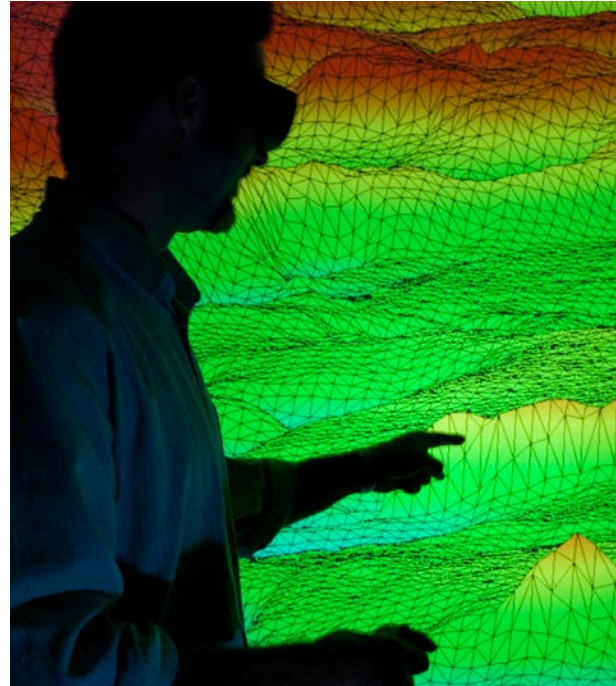
<sup>2</sup> For the purpose of the code, bees are defined as livestock.

## 20. GEOPHYSICAL AND GEOCHEMICAL SURVEYS AND GRIDLINES

Geophysical and geochemical surveys are frequently conducted during the early stages of a project and require thoughtful planning to minimise impact on the environment. Assessing the risks associated with alternative shapes, sizes and methods for the sampling grids, will provide guidance about what environmental management regimes to apply.

### Exploration licence conditions

- 37 In designing and constructing geophysical and geochemical surveys, the licensee must take all reasonable measures to prevent adverse impacts to the environment and / or the health and safety of people.
- 38 Prior to designing and constructing geophysical and geochemical surveys, the licensee must consult with the Crown land manager and / or private landowner / occupier about the position of gridlines and geophysical lines.



### Recommended practice

- > The construction of gridlines involving the clearing of native vegetation is only permitted if explicitly approved under a work plan.
- > Minimise the use of bulldozers, excavators and other earthmoving equipment when cutting survey lines. Where possible, conduct gridline surveys on foot. Minimise the width of seismic lines.
- > Use biodegradable flagging tape to mark sites of interest.
- > Remove all survey markers including biodegradable flagging tape as soon as possible after the completion of a survey, unless the area is to be accessed again during the term of the licence.

## 21. EXPLOSIVES

In rare occasions, explosives are used in exploration projects to break up rock and displace large quantities of earth. Specific explosives are used for particular circumstances and may produce little or no flame, and explode at low temperatures to prevent secondary explosions of mine gases and dust. Noise, vibrations and fly rock from explosions are also important safety, environmental and amenity management issues when using explosives.

Engaging with neighbours about these issues is an important aspect of the safety and environmental management of an exploration project.

Explosives must only be used and handled by licensed personnel in accordance with all relevant legislation and standards relating to their transport, storage, handling, loading and detonation including the:

- > Dangerous Goods Act 1985
- > Dangerous Goods (Explosives) Regulations 2011
- > Dangerous Goods (Storage and Handling) Regulations 2012
- > Dangerous Goods (Transport by Road or Rail) Regulations 2008
- > Occupational Health and Safety Act 2004
- > Occupation Health and Safety Regulations 2007
- > Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2013
- > Australian Standards series AS 2187 *Explosives-Storage, transport and use*.

### Exploration licence condition

- 39 When using explosives or high electrical currents, all reasonable measures must be taken to prevent harm or disturbance to people, domestic animals, livestock and wildlife.

### Recommended practice

- > Install warning signs in strategic locations.
- > Charge sizes should be kept to the minimum necessary.
- > Notify nearby private landowners / occupiers and residents, or on Crown land, the Crown land manager, prior to detonating explosive charges.
- > Where possible, restrict the detonating explosive charges to times that will not unduly annoy or disturb others in the area, animals or wildlife. Consult with the private landowner / occupier or Crown land manager about this.
- > The peak particle velocity resulting from blasting operations, as measured in the vicinity of any sensitive location in accordance with Australian Standards: Explosives – Storage, transport and use (AS 2187.2) must not exceed 5mm on more than 5% of blasts fired in a 12-month period and 10mm at any time.
- > The airblast overpressure from blasting operations, as measured in the vicinity of any sensitive location in accordance with Australia Standards: Explosives – Storage, transport and use (AS 2187.2), must not exceed 115 db(L) on more than 5% of blasts fired in a 12-month period, and 120 dB(L) at any time.



## 22. ROADS

Good planning is an important aspect of road construction. A well-planned road will cost less to construct and maintain than one that is badly placed. Installation of drains and the stabilisation of embankments, as well as maintenance and eventual rehabilitation of the roads should be considered at the time of planning and costing of a project.

*The Code of Practice for Timber Production (2007)* provides detailed guidelines for the planning, design, location, construction and drainage of roads. It is recommended, as a minimum, that the construction of roads under an exploration, retention or mining licence are developed with the guidance provided in the *Code of Practice for Timber Production (2007)*.

### Exploration licence conditions

- 40 In using, designing and constructing roads, the licensee must take all reasonable measures to prevent adverse impact to the environment.
- 41 Prior to designing and constructing roads, the licensee must consult with the public land manager, responsible road authority\* and / or private landowner / occupier.
- 42 Prior to using a closed road the licensee must gain consent from the responsible road authority\*.
- 43 Prior to conducting ground intrusive exploration works on a road the licensee must gain consent from the responsible road authority\*.

\* See Definitions section

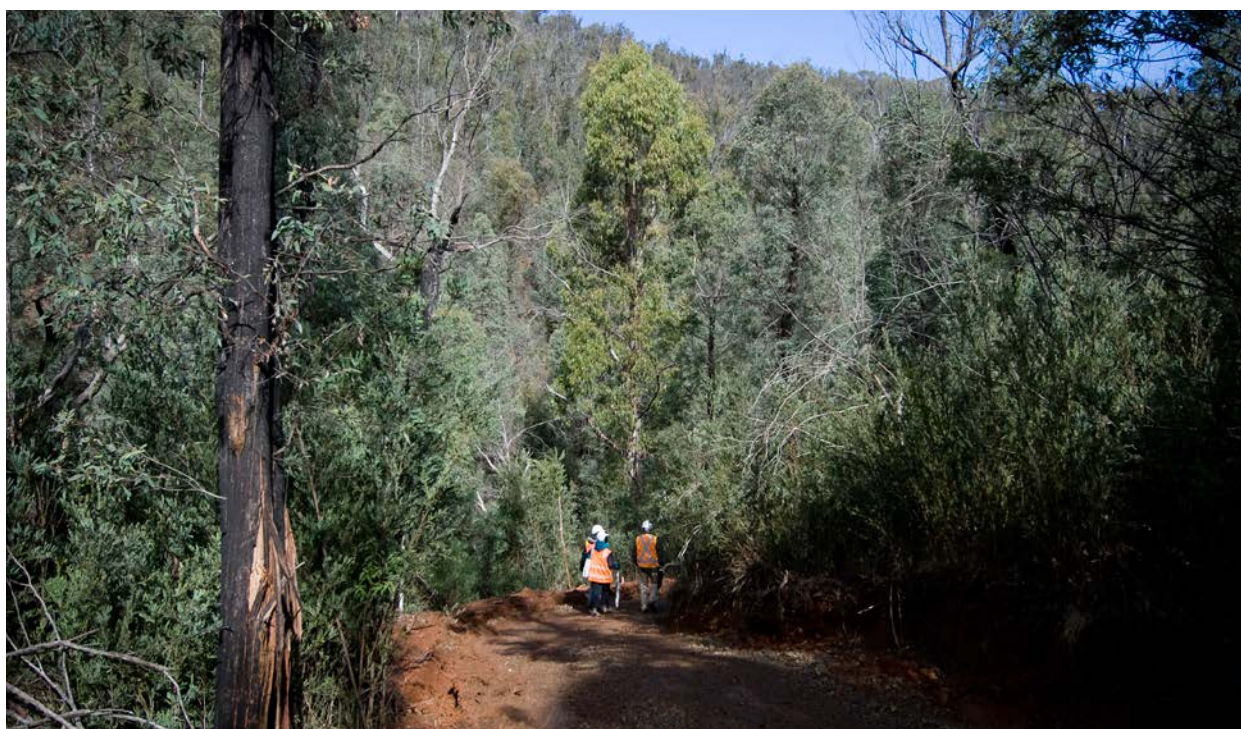
## Recommended practice

### Use of Roads

- > Plan exploration works to use the existing roads as much as possible.
- > Many roads will deteriorate rapidly with heavy vehicle traffic under inappropriate weather conditions. Exploration should be scheduled to avoid these unsuitable conditions. Where road damage is incurred the responsible road authority\* may seek recompense under the provisions of the *Road Management Act 2004*. The passage of tracked equipment along existing roads or over bridges should be discussed with the responsible road authority\* first and will often require rehabilitation afterwards.
- > Roads on Crown land (even remote tracks) are subject to Road Safety Traffic Regulations. Vehicles must be registered and should have the required over-dimension or over-mass permits. For all exploration works involving the travel of heavy machinery, it is recommended that the Crown land manager be consulted so that any road, bridge or other relevant load restrictions can be flagged.
- > Where exploration is undertaken on road reserves, licensees must comply with the requirements of the *Road Management Act 2004* specified in the *Code of Practice for Worksite Safety – Traffic Management (2004)*.
- > Road-opening permits may be required from the local council.

### Use of Closed Roads

- > Roads may be closed permanently, seasonally, temporarily or to particular vehicles or users. The information required from the licensee to assess a proposal to travel on a closed road includes the timing and duration of travel, vehicle types, traffic levels and how environmental and visitor impacts are proposed to be minimised.



## Planning

- > Assess the need to construct a formed road. If enough traffic or conditions are anticipated where vegetation will be removed, bare ground exposed, soil rutted or compacted, or lead to water pooling in wheel tracks, then a proposal to construct a new road should be put to the Crown land manager in preference to travelling off road.
- > Roads may only be constructed if approved in the work plan with the consent of the Crown land manager or private landowner / occupier.
- > Plan exploration works to use existing roads as much as possible. Consult with the Crown land manager or private landowner / occupier about the travel of heavy equipment on the existing road system.
- > Use lightweight drill rigs and excavation equipment where practicable, to reduce the requirement for road construction. Investigate alternative means of access to exploration sites, such as the use of helicopters in mountainous terrain.
- > Ensure field crew and earthmoving contractors are fully aware of the requirements of the private landowner / occupier, the Crown land manager, and the work plan.
- > Minimise the movement of vehicles on temporary roads.

## Design

- > The design of roads should take into account:
  - soil and sub-grade conditions;
  - road drainage;
  - water quality requirements;
  - landscape and environmental values;
  - any other uses of the road.
- > Roads should be designed, constructed and managed in accordance with:
  - Management Procedures for timber harvesting, roading and regeneration in Victoria's State forests, 2009;
  - The Code of Practice for Timber Production (2007);
  - *Road Management Plans prepared under the Road Management Act 2004*;
  - VicRoads Road and Bridge Design Manuals;
  - Review of road classifications, geometric designs and maintenance standards for low volume roads (Giummarra 2001);
  - Guidelines for assessment of applications for Permits and Licences for works on waterways (Sinclair Knight Merz 2001);

- Unsealed roads manual: Guidelines to good practice: a comprehensive manual prepared by the Australian Roads Research Board (ARRB 2000);
- Fish Passage Requirements for Waterways Crossings (NSW Fisheries 2004);
- Bridges should be designed in accordance with AS5100 Bridge Design;
- Conditions of any permits or licences

## Construction of New Roads

- > Where exploration is required outside of the existing open road network, exploration along closed roads or off-road low impact exploration may be appropriate in preference to the creation of new permanent or temporary roads.
- > Good planning is an important aspect of road construction. A well-planned road will cost less to construct and maintain than one that is badly placed. Installation of drains and the stabilisation of embankments, as well as maintenance and eventual rehabilitation of roads, should be considered at the time of planning and costing of a project.

## Travelling Off Road

- > Licensees are allowed to travel off-road on public land, but under the Biodiversity assessment guidelines, *Aboriginal Heritage Act 2006*, *Heritage Act 1995* and *Forests Act 1958* before any vehicle travel off-road on public land is undertaken, the licensee MUST:
  - Check on the proposed route for any recorded biological, cultural or historic values, erosion hazard areas and soil pathogen (ie. *Phytophthora cinnamomi*) infected areas.
  - Avoid impacts on native vegetation, flora and fauna as far as practicable.
  - Understand that off-road travel on public land is not allowed by the general public, so off-road travel in exploration needs to be done sensitively and discreetly in areas of visitor use, where it may be visible to passing traffic (particularly during holiday periods). Off-road traffic is very difficult to stop once usage patterns become established so off-road traffic may not be appropriate where the route is likely to become visible to the public and adopted for their use.
  - Not undertake off-road travel through drainage lines or on fragile soils.

## 23. DRILL SITES, COSTEANS, TRENCHES AND BULK SAMPLING EXCAVATIONS

Costeans and bulk sampling sites and excavated drill hole pads should be located to minimise earthworks and to avoid difficult construction conditions. Site selection should be based on consideration of both environmental, cultural heritage and occupational health and safety issues.

Drilling, costeaning and bulk sampling operations are inherently hazardous activities and should be carefully planned and supervised by a suitably trained and experienced person. Only trained and experienced people should operate drilling equipment.

'Cave in' is a particular risk when taking samples from costeans. Important safety considerations when undertaking costeaning include soil condition, surface water drainage and flooding potential, and design and construction of protective structures.

### Exploration licence condition

- 44 The licensee must take all reasonable measures to prevent adverse impacts of establishing costeans, drill holes, bulk sample excavations and trenches to the environment and / or the health and safety of people.

### Recommended practice

#### Location

- > Where possible, select level sites to minimise earthworks.
- > Wherever possible, sites should be located adjacent to existing tracks and within previously cleared or disturbed areas. Work sites should be selected to avoid waterways, drains and channels.
- > Where practicable, locate costeans and bulk sample excavations to avoid damaging the roots of trees. As a rule of thumb, roots can extend as far laterally as the crown.
- > Drill pads, costeans and bulk sample excavations should be confined to the smallest area in which it is safe and practicable to conduct operations.

#### Construction

- > Costeans deeper than 1m should be constructed and operated in accordance with the Victorian Work Cover, *Code of Practice - (No 8) - Safety Precautions in Trenching Operations* (1988)<sup>3</sup>.
- > Costeans and bulk sample excavations, including ditch witch trenches, should be managed to minimise risk to the environment.
- > Where costeans and bulk sample excavations are to be left open for longer than 24 hours, temporary fencing should be erected.

- > Prior to carrying out trenching on slopes greater than 10 degrees, the licensee should consult with an ERR inspector and Crown land manager or landowner / occupier to ensure the risk of erosion or other impacts is minimised.
- > Ensure that excavated drill pads are properly formed, consolidated and drained and, where appropriate, facilities such as cut-off drains and silt traps are installed.

#### Operations

- > Use the minimum-sized earthmoving equipment able to successfully complete the task.
- > Where costeans are left open for longer than 24 hours, slope one end gently to allow trapped animals to escape.
- > Wheel-mounted equipment should be used in favour of track-mounted equipment wherever practical to minimise soil disturbance.

#### Topsoil removal

- > Where there is an excavated sump, topsoil should be stored adjacent to and on the uphill side of the sump.
- > Where a "ditch witch" is used for trenching and topsoil removal is impracticable, rake humus and leaf litter to one side ahead of the trencher then rake it back over the backfilled trench as soon as possible.

#### Backfilling / refilling

- > Costeans or voids created from bulk samples should be backfilled as soon as possible. Costeans or voids created from bulk samples should be backfilled to approximately 150mm above the natural ground level to allow for settlement. The backfilled material should be compacted by driving over it.
- > When refilling, bulk sample excavations should be battered to slopes not exceeding 1 (vertical): 3 (horizontal).
- > Replace subsoil first and topsoil last with the humus and organic matter on top.
- > Where refilling of a bulk sample excavation is not achievable, the excavation should be self-draining, wherever possible.
- > Undertake follow-up surveys at appropriate intervals following backfilling to assess the amount of settlement. Where settlement has occurred to below the natural ground surface, top up the depression with topsoil.

#### Samples

- > Samples should be moved off site on a daily or weekly basis or within the shortest possible timeframe. On Crown land, samples may be retained on site for up to four weeks from completion of the program with the Crown land manager's agreement.

<sup>3</sup>This document is a guideline and compliance with it will not necessarily ensure compliance under the OHS Act (2004).





## 24. DRILL HOLE OPERATION, CONSTRUCTION AND DECOMMISSIONING

Drilling exploratory holes in order to identify the minerals contained in the substrate is an integral part of exploration activities. Well-planned drilling programs can provide invaluable information about the mineralogy, their extent and the type of processing that may be necessary to extract it from its host rock. Drill holes should be properly constructed, operated and decommissioned in order to prevent ground or surface water contamination, loss of wildlife and for the safe use of the land subsequent to exploration or mining.

### Exploration licence conditions

- 45 The licensee must ensure that all reasonable measures are taken to minimise the impacts of drilling operations and that the operations are conducted in a manner that ensures protection of the environment, human health and amenity.
- 46 The licensee must prevent contamination of aquifers as a result of drilling operations.
- 47 The licensee must ensure that where a drillhole is to be left open overnight or longer, a temporary cap is fitted.
- 48 The licensee must ensure that when drilling for coal seam gas (CSG) the blowout prevention equipment (including accumulators) of a well is installed, operated, maintained and pressure tested.
- 49 The licensee must ensure that the permanent abandonment of CSG wells include the installation of appropriate concrete surface plugs to ensure the integrity of the well and formations.
- 50 The licensee must ensure that accurate records of decommissioning procedures are kept to provide future reference, and to demonstrate to the Department of Economic Development, Jobs, Transport and Resources that the drillholes have been satisfactorily plugged and abandoned.



## Recommended practice

### **Drill operation and bore construction**

- > Drilling and construction of bores drilled for water supplies, drainage, dewatering or groundwater monitoring must be licenced under the *Water Act 1989*. Drilling and construction of water bores should be undertaken with reference to the “Minimum Construction Requirements for Water Bores in Australia”.
- > Detailed logs of formation lithology, groundwater intersections and drillmud losses should be kept during drilling to be used when determining borehole decommissioning requirements.
- > Appropriate procedures should be in place for well shut-in and killing operation, particularly if the drill hole is flowing.
- > Accurate records of drill holes location can be achieved using a Global Positioning System (GPS).
- > Use biodegradable drilling fluids whenever possible.
- > When undertaking ‘downhole logging’ of drill holes, the use, handling and transport of radiation sources as described in the *Radiation Act 2005* and *Radiation Regulations 2007* must be complied with.
- > In the case of a radiation source becoming lost down a drill hole, all practical steps should be undertaken to ensure that it is recovered.

### **Aquifers**

- > Where drilling intersects groundwater held under pressure, uncontrolled flowing (artesian) bores can result, causing wastage of the groundwater resource and the loss of hydrostatic pressure. All non-flowing bores can potentially provide a means of contaminating groundwater by acting as a conduit for surface run-off.
- > Bore construction should be undertaken by a suitably qualified driller who possesses the appropriate experience and the relevant class of licence deemed necessary to the Relevant Water Corporation.
- > Bores constructed for long-term groundwater monitoring should be finished with headworks that prevent surface water ingress to the bore and security against unauthorised bore access.
- > Bore headworks should display details of bore owner and a bore number or other unique bore identifier.

### **Sumps**

- > Portable, self-contained sumps (including collar sumps) should be used wherever possible, particularly in areas of native vegetation.
- > Where portable sumps are impractical, drilling muds and fluids should be contained in an appropriately sized and lined sump or tank for re-circulation and / or disposal at appropriate waste management facilities. Above-ground tanks are preferred over excavated sumps.
- > Where a drilling sump is excavated, the sump should be of a sufficient size to contain drilling fluids, have a freeboard (error margin), be well constructed and lined with a suitable impermeable membrane, such as plastic.
- > At the completion of drilling, the sump shall be drained and the liner removed. The sump excavation shall be refilled with the subsoil replaced first and the topsoil last. Liners and sump contents shall be disposed of at a site approved for the disposal of such waste.

### **Drilling operations for coal bed methane**

- > Kicks are due to abnormal pressure of formation fluids (gas or water or a mixture of both), which result in the formation pressure being greater than the hydrostatic pressure of the drilling fluid or mud. This imbalance will allow invading formation fluids to enter the drill hole and can lead to potential hazards including blow-outs. Kicks are caused by both inadequate drilling practices and sudden changes in geological conditions.
- > The occurrence or magnitude of kicks may be minimised by:
  - Maintaining sufficient drilling mud density and drill mud volumes while drilling.
  - Conducting flow checks at specific times during the drilling operation, particularly before any tripping and when the drill string (rods, tubing and bit) is being pulled out of the hole.
  - Regular maintenance of equipment such as mud pumps and blow-out preventers.

### **Decommissioning**

- > Decommissioning practices for mining exploration are outlined in the guideline, Department of Primary Industries (2002) *Abandonment of Mineral Drillholes*. The Requirements for decommissioning and sealing drill holes will depend on the type of aquifer system intersected.
- > All drill holes should be appropriately capped below the ground surface, as soon as possible after completing the drilling program.
- > Where groundwater flows at the surface, the aquifer must be sealed to permanently stop the flow.
- > Where wide diameter drilling is undertaken, for example by bucket auger (or Calweld) equipment, drill holes should be backfilled with drill cuttings.
- > All drill samples (cuttings and cores) not used for decommissioning shallow, dry boreholes should be removed from the licence area at the completion of drilling, or as determined by the landowner.

- > The depth of the top of the grout, bridge, casing cap or any casing remaining in the abandoned drill hole, should be determined in consideration of the land use, and should be a minimum depth of 300mm below ground surface. The void above the grout, bridge, casing cap or casing should be backfilled with soil to an appropriate level above the natural surface to allow for settlement.
- > A grout plug at least 2m thick should be part of the grout surface cap.
- > Where bores are no longer required for exploration work they should, as soon as possible after completing the drilling program, be decommissioned to restore, as far as practicable, the aquifer isolation that existed before the bore was drilled.
- > The contents and liners of a decommissioned sump should be disposed of at a site approved for the disposal of such waste.
- > Unrecoverable radiation sources may only be sealed down the drill hole with the permission of the ERR inspector, after consultation with the relevant authority (Department of Health) and the recording of necessary information. Notifications should include location (coordinates), stratigraphy and depth to groundwater.
- > Where groundwater flows at the surface from an unconfined aquifer, the aquifer must be sealed or the drill hole appropriately capped, to permanently stop the flow.
- > Where confined or multiple aquifers are intersected, the drill hole should be appropriately sealed to prevent flow of water between aquifers and subsequent groundwater contamination.
- > Dry boreholes or where non-flowing, shallow, unconfined aquifers are present may be sealed by backfilling with uncontaminated cuttings and capping with grout at an appropriate depth below the surface.
- > Accurate records should be kept of any abandonment procedure to provide future reference and to demonstrate to DEDJTR that the drill holes have been satisfactorily abandoned.

## 25. UNDERGROUND EXPLORATION

Prior to undertaking any underground exploration, all available information about the condition and extent of the underground workings should be collated and assessed, such as adit and shaft stability, groundwater, ventilation and noxious gases. The exploration of underground mine workings should be planned and coordinated by a competent person who is experienced in underground mining. All personnel entering underground mine workings should be appropriately equipped, trained and thoroughly briefed about safety and emergency procedures.

At sites where underground exploration occurs, the licensee must ensure compliance with relevant Occupational Health and Safety legislation.

### Exploration licence condition

- 51 The licensee must ensure that during underground exploration and development works, access shafts, adits and declines are made safe.
- 52 The licensee must ensure that on completion of underground exploration and development works, access shafts, adits or declines no longer required must be permanently closed off and the site made safe for the public and wildlife.

### Recommended practice

- > An operator undertaking underground exploration must ensure appropriate safety procedures and systems are adopted in order to protect the public and wildlife.

## 26. REHABILITATION

It is important to consider and determine rehabilitation requirements prior to starting any works. Project design should take into account rehabilitation works. Progressive rehabilitation is the most effective way to manage both the work plan requirements and the size of the rehabilitation bond necessary for an exploration project. In some cases, sites may revegetate naturally with volunteer species from the surrounding area. Stockpiled topsoil may contain sufficient viable propagules (seed or plant fragments) to adequately revegetate the site if the period that the soil has been stockpiled is sufficiently brief (usually no more than three months). However stockpiled soil may also contain weed propagules.

Most often, exploration sites require active rehabilitation work in order to establish the appropriate vegetation communities and meet the commitments outlined in the work plan. All areas within the boundaries of an exploration licence such as drill sites, tracks and campsites must be rehabilitated before DEDJTR will release the rehabilitation bond.

### Exploration licence conditions

- 53 The licensee must ensure that disturbed areas are rehabilitated as soon as possible after the completion of exploration works.
- 54 The licensee must ensure that Indigenous species used in rehabilitation are sourced from the local area, of local provenance and appropriate to the site's Ecological Vegetation Class (EVC).



## Recommended practice

### **General rehabilitation**

- > Progressive rehabilitation should be undertaken to minimise the total area of disturbance at any one time and should be completed in accordance with the approved work plan, licence conditions, and any other requirements as directed by the ERR inspector.
- > Rehabilitation should be timed appropriately. For instance, earthworks should not be undertaken when soil is waterlogged. Depending on local conditions, revegetation is best done from autumn to early spring.
- > On private land, rehabilitation requirements should also be set out in the compensation or consent agreement.
- > Any native vegetation off-set detailed in the approved work plan or licence condition must be completed in accordance with the requirement.
- > Information on EVCs is located on the DELWP website ([www.delwp.vic.gov.au](http://www.delwp.vic.gov.au)) under Environment and Wildlife, Biodiversity.

### **Revegetation**

- > All disturbed areas should be revegetated and reinstated back to the natural surface, or to a stable landform similar to that of the surrounding undisturbed areas, unless otherwise specified in the work plan.
- > Replanting may be required following initial establishment (usually after 12 months) to ensure adequate overall survival.
- > Protection of the revegetation area may be required, such as temporary fencing, until the vegetation is successfully established.
- > Revegetation works on Crown land should be carried out in accordance with requirements of the Crown land manager and in accordance with the work plan.

- > Where reseeded is required, the licensee should ensure that provision is made for the collection of sufficient quantities of seed and propagules from locally occurring native species. Otherwise, where practicable, seed and other propagules should be collected from the indigenous plants originally removed from the site.
- > A permit must be obtained from the Crown land manager where it is proposed to collect indigenous plant material from Crown land.
- > The application of fertiliser and soil conditioners may be required for successful revegetation, but in general, the use of fertilisers tends to promote weeds.

### **Sample points**

- > Rehabilitate small excavations such as sample points as soon as practicable. Refill excavations with subsoil, then topsoil and respread leaf litter. Small excavations can usually be rehabilitated immediately after taking a sample.

### **Infrastructure**

- > Any pre-existing infrastructure damaged as a result of exploration activities, and which is to be retained on site after the completion of the exploration works, should be repaired to the satisfaction of the private landowner / occupier or Crown land manager.
- > Where exploration related infrastructure is to remain, the licensee should obtain the written consent of the Crown land manager or private landowner / occupier that they will assume responsibility for it.

### **Waste and storage areas**

- > Rehabilitate redundant fuel and lubricant storage areas by removing the liner of the bunded area and recycling or appropriately disposing of it, and levelling the bund walls and any other requirements of the approved work plan.
- > Remove all waste and redundant equipment, such as electrical cables, foils, probes and any other materials, from the licence area.



## 27. REPORTING, MONITORING AND AUDITING

- > Regulation 36 and Schedule 22 of the MRSDMI Regulations require that the licensee record and report certain information to DEDJTR about the performance of exploration activities. Condition requirements may include environmental monitoring and reporting because of the nature of an exploration site or as a result of inspections and / or complaints.
- > Conditions related to monitoring and auditing, may also be set as part of landowner consent for work on restricted Crown land, or OAAV or HV consents. These conditions often require pre-work surveys for cultural sites and artefacts, pre and post-work flora and fauna surveys, and in some cases, during-work observations for significant flora and fauna. External, independent audits of performance may also be required under landowner consents.
- > For this reason, there may be additional conditions for reporting, monitoring and auditing to those outlined below. Appendices 5, 6, 7 and 8 contain pro formas for environmental incident, monitoring, complaints and rehabilitation recording.
- > The Environmental Annual Report is in addition to the Schedule 22 Annual Technical Report. It is recommended that the submission of both reports occurs simultaneously.

### Recommended practice

- > Licensees should make provision for immediate notification of incidents to DEDJTR. Incidents may include release of contaminants, such as fuel, to the environment or damage to significant vegetation or sites of cultural significance.
- > A pro forma for recording and reporting incidents, and recording environmental monitoring, complaints and rehabilitation may be used and is provided in Appendices 5, 6, 7 and 8 respectively.
- > Recording complaints and their resolution assists licensees to demonstrate compliance with work plan requirements for both environmental management and community engagement
- > Monitoring results should be available upon request by an ERR inspector.
- > The licensee should undertake regular internal audits to confirm operations are conducted as required by the licence and work plan.
- > Information supplied in compliance with condition 55 should be submitted in conjunction with the Annual Technical Report required under Regulation 36 of the *Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2013*.

### Exploration licence conditions

- 55 The licensee must implement a program for monitoring environmental impacts and rehabilitation.
- 56 The licensee must submit an Annual Report that includes:
  - A report about the environmental management of exploration activities including the results of any environmental audits conducted.
  - Quantity, area and type of native vegetation removed
  - Details of current progressive rehabilitation activities.
  - A rehabilitation report detailing completed rehabilitation activities over that year.
- 57 The licensee must notify the Department of Economic Development, Jobs, Transport and Resources as soon as practical of any environmental incident which results in:
  - An emission not authorised by a licence, work authority or work plan.
  - Any deviations from conditions or environmental standards outlined for the site.
- 58 Within seven (7) days of an environmental incident, the licensee must prepare and forward a report to the department detailing the following information:
  - The cause, time and duration of the incident.
  - The native vegetation or threatened flora/fauna affected by the incident (if applicable)
  - The type, volume and concentration of every pollutant discharged as a result of the incident.
  - Action taken by the licensee in relation to the incident.
  - Action taken to prevent any recurrence of the incident.

## 28. DOCUMENTATION AND RECORDS

The licensee should maintain good documentation and records of all exploration activities to ensure and demonstrate compliance with relevant legislation, standards, licence conditions and the work plan. Good documentation is also important for consistency in exploration practices over the life of a project, irrespective of changes in personnel.

The appropriate level of documentation and record keeping will depend on the complexity and scale of the individual operation. Documentation should be kept up to date and be easily accessible. An index of the documents required for the project should be compiled.

### Recommended practice

#### **Document control**

- > Documents should be written in a format that is easily understood and referenced by all relevant parties involved in the exploration project. Simple inclusions such as page numbers, section headings and date of last revision are essential for making a document user friendly.
  - > Information containing large amounts of data for further referencing should be placed in appendices at the end of a document, while necessary contact details should be placed toward the front of the document. Within the body of the document, main headings and sub-headings should be included to highlight important information in the body of the text. This standard structure provides a minimum guide for licensees.
  - > The general document format should follow the pattern outlined below:
    - title page containing company name, logo, project name and date of version, and authorship; and
    - contact details; and
    - table of contents; and
    - page numbers; and
    - section numbers; and
    - purpose and body of text; and
    - further information; and
    - any appendices (including authorisations); and
    - reference list.
- #### **Record keeping**
- > Good record keeping is equally important to the exploration process and ensures that all parties are well informed about a project's progress, outcomes, agreements, negotiations and next steps at all times. The creation of a paper trail is invaluable in providing the history of events, especially during later stages of the project, when personnel may have changed. Hard copies of all records should be maintained. All licensees should be capable of capturing, maintaining and providing evidence of their business activities over time to satisfy the organisation's record keeping needs. While the purpose and content of records will vary between projects, the system capability or functionality required to capture, maintain and access such records is common to all projects.
  - > Records management processes should protect the integrity of records over time. In order to do this, a licensee should ensure that records are:
    - authentic; and
    - reliable; and
    - complete; and
    - unaltered; and
    - useable, and
    - available.
  - > Types of documentation required during an exploration project may include:
    - Records of key contacts (private landowners / occupiers and government agencies) and all communications and commitments with relevant authorities, stakeholders and the general public.
    - Approved work plan and conditions.
    - Work instructions covering the various exploration activities to be undertaken during the operation, such as track construction, drilling, costeaning and rehabilitation.
    - Emergency response procedures and contact details.
    - Roles and responsibilities of exploration personnel and reporting structures.
    - Induction, training and qualification of personnel.
    - Sites of environmental and cultural significance in close proximity to exploration activities.
    - Records of all exploration activities undertaken, including coordinates and maps.
    - Monitoring and auditing records.
    - Directives issued by an ERR inspector.
    - Survey reports (specifications and results).
    - Locations of exploration infrastructure (for example, fuel storage areas) and stock piles.

# EARTH RESOURCES REGULATION CONTACTS

## OPERATIONS DISTRICTS



### CONTACT DETAILS FOR MANAGERS, OPERATIONS

#### Melbourne District

Ph: +61 03 9092 1954  
Mobile: 0419 593 303

#### South West District

Ph: +61 03 5336 6802  
Mobile: 0447 391 274

#### Gippsland District

Ph: +61 03 5160 9011  
Mobile: 0429 400 569

#### North East District

Ph: +61 03 5761 1501  
Mobile: 0408 218 383

#### North West District

Ph: +61 03 5430 4692  
Mobile: 0409 541 160

For more information and a detailed list of contacts, please visit

[www.energyandresources.vic.gov.au](http://www.energyandresources.vic.gov.au)

# DEFINITIONS

<b>“Area of disturbed land”</b>	means any area of land from which topsoil has been removed.
<b>“Closed road”</b>	(from MRSD Act 1990) means a road lawfully closed to public access by barriers (including roads closed seasonally, temporarily or permanently, and management vehicle only roads), roads which have been rehabilitated, and roads which are not trafficable due to the regrowth of vegetation.
<b>“Community”</b>	a broad term used to define groups of people, whether they are stakeholders, interest groups or citizen groups. The community may surround a geographic location (community of place), be a community of similar interest (community of practice) or have a special interest or legal interest in the land (community of standing).  Community may also refer to a community of flora and fauna i.e., an assemblage of organisms existing together in the wild.
<b>“Consult”</b>	Consultation is a two-way communication process between the licensee and the community. It is the means by which licence holders can inform themselves of the community’s attitudes and expectations. Methods of consultation include suggestion boxes, written or electronic surveys, hotline or phone-in opportunities, media advertising inviting submissions, public exhibitions, interviews, focus group sessions and meetings.
<b>“Crown land”</b>	(from MRSD Act 1990) means land that is, or that is by any Act deemed to be, unalienated land of the Crown, and includes:  a) land of the Crown that is reserved permanently or temporarily by or under any Act; and  b) land of the Crown occupied by a person under a lease, licence or other right under the MRSD Act or any other Act – but does not include land which is the subject of a licence granted under Part 3A of the <i>Victorian Plantations Corporation Act 1993</i> .
<b>“Exploration”</b>	(from MRSD Act 1990) means exploration for minerals and includes:  a) conducting geological, geophysical and geochemical surveys; and  b) drilling; and  c) taking samples for the purposes of chemical or other analysis; and  d) extracting minerals from land, other than for the purpose of producing them commercially; and  e) in relation to an exploration licence, anything else (except mining) that is specified in the licence.
<b>“Ground intrusive work”</b>	(from MRSD Act 1990) means work that disturbs the topsoil or surface rock layer of the ground by machinery (other than hand-held machinery) in the course of drilling a hole, ground levelling or augering.
<b>“Hardstand area”</b>	(from MRSD Act 1990) means an open ground area with a prepared surface that is used for storing material and standing vehicles.
<b>“Hydraulic fracturing”</b>	(from MRSD Act 1990) means the injection of water and other materials into a bore under pressure.
<b>“Informed verbal consent”</b>	where low impact exploration, except ground disturbing work or the removal of vegetation, is proposed, the land owner may elect to give informed verbal consent instead of written consent. To qualify as informed verbal consent the land owner must be informed regarding; the nature and location of the works proposed, their right to choose to give written consent; their rights as a land owner; and the circumstances under which compensation may be payable.
<b>land “occupier”</b>	(from MRSD Act) means:  a) in relation to private land, any person lawfully in possession of the land; and  b) in relation to Crown land, the Secretary (as defined in the <i>Conservation, Forests and Lands Act 1987</i> ).

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**land “owner”**

(from MRSD Act) means:

- a) in relation to Crown land, means the Crown land Minister; and\*
- d) in relation to private land under the *Transfer of Land Act 1958* (other than land in an identified folio under that Act), the person who is registered or entitled to be registered as the proprietor of the land; and
- e) in relation to other private land -
  - (i) if the land is mortgaged, the mortgagor; and
  - (ia) if the land is subject to a licence granted under Part 3A of the *Victorian Plantations Corporation Act 1993*, the licensee, under that Part, of the land; and
  - (ii) in any other case, the person who has the fee in the land.

\* def. of *owner* amended in MRSD Act to remove (b) and (c)

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**“Low impact exploration”**

(from MRSD Act 1990) means exploration that does not involve any of the following:

- b) the taking of flora listed under section 10 or Schedule 2 of the *Flora and Fauna Guarantee Act 1988*, unless that flora is taken from private land that is not owned by a public authority;
  - c) the taking of flora from a community listed under section 10 or Schedule 2 of the *Flora and Fauna Guarantee Act 1988*, unless that community is found on private land that is not owned by a public authority;
  - d) the taking of fauna listed under section 10 or Schedule 2 of the *Flora and Fauna Guarantee Act 1988*;
  - e) the taking of any taxon or community of flora or fauna from any habitat or parts of habitat under section 20 of the *Flora and Fauna Guarantee Act 1988*;
  - f) the removal or damaging of more than 1 hectare of native vegetation if that area does not contain any native trees during either the term of the licence or a period of 5 years from the grant of the licence, whichever ends first;
  - g) the removal or damaging of more than 15 native trees that have a trunk diameter of less than 40 cm at a height of 1.3 metres above ground level during either the term of the licence or a period of 5 years from the grant of the licence, whichever ends first;
  - h) the removal or damaging of more than 5 native trees that have a trunk diameter of 40 cm or more at a height of 1.3 metres above ground level during either the term of the licence or a period of 5 years from the grant of the licence, whichever ends first;
  - i) the creation of any road, structure or hardstand area without the consent of the owner or occupier of the land on which it is created;
  - j) the use of any closed road without the consent of the owner or occupier of the land on which the road is located or undertaking works on any road without the consent of the owner or occupier of the land on which the road is located;
  - k) ground intrusive work that:
    - i. is within 200 metres of a waterway; or
    - ii. is on a slope steeper than 1 vertical : 3 horizontal; or
    - iii. is of greater than 2 hectares in an area of cultural heritage sensitivity during either the term of the licence or a period of 5 years from the grant of the licence, whichever ends first; or
    - iv. involves taking water from an aquifer, hydraulic fracturing, or excavation using heavy earth moving equipment.
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<b>“Private land”</b>	(from MRSD Act) means any land that is not Crown land.
<b>“Responsible road authority”</b>	means the authority responsible for the management, maintenance, and construction of a road and are either privately owned, or managed by Local Government, the Department of Environment, Land, Water and Planning or VicRoads.
<b>“Restricted Crown land”</b>	<p>means land where special permission must be obtained for mining and / or exploration. Schedule 3 of the MRSD Act specifies the following land types to be classified as restricted Crown land:</p> <ol style="list-style-type: none"> <li>1. land reserved under the <i>Crown Land (Reserves) Act 1978</i> for any of the following purposes <ol style="list-style-type: none"> <li>a) regional parks;</li> <li>b) coastal parks (including Gippsland Lakes Reserve);</li> <li>c) marine parks;</li> <li>d) flora or flora and fauna reserves;</li> <li>e) wildlife reserves or wildlife areas (including Wildlife Management Co-operative Areas);</li> <li>f) natural features reserves, scenic reserves, cave reserves, geological reserves or natural features and scenic reserves;</li> <li>g) bushland reserves;</li> <li>h) historic areas or historic reserves;</li> <li>i) public land water frontage reserves;</li> <li>j) streamside reserves;</li> <li>k) coastal reserves;</li> <li>l) national heritage parks;</li> <li>m) nature conservation reserves;</li> <li>n) historic and cultural features reserves.</li> </ol> </li> <li>2. Any land that is an alpine resort within the meaning of the <i>Alpine Resorts Act 1983</i>.</li> <li>3. Any land that is a heritage river area under section 5 of the <i>Heritage Rivers Act 1992</i> other than land to which paragraph (a) or (b) of section 6 of the MRSD Act applies.</li> <li>4. Any land that is a natural catchment area under section 6 of the <i>Heritage Rivers Act 1992</i> other than land to which paragraph (a) or (b) of section 6 of the MRSD Act applies.</li> </ol>
<b>“Road”</b>	(from MRSD Act 1990) means a road within the meaning of the <i>Road Management Act 2004</i> and includes Crown land permanently or temporarily formed for the passage of motor vehicles having four or more wheels, and land specified as an unused road under section 400 of the <i>Land Act 1958</i> .
<b>“Sediment control”</b>	means using a device, such as silt fences, hay bales or grassed strips to filter waterborne sediment running off areas of disturbed land.
<b>“Structure”</b>	(from MRSD Act 1990) means materials that have been erected for the purpose of facilitating exploration activities and includes, but is not limited to, facilities associated with exploratory team members, sound attenuation devices to minimise noise disturbance from exploration activities, and ancillary storage facilities.
<b>“Take”</b>	(from the <i>Flora and Fauna Guarantee Act 1988</i> ) means to kill, injure, disturb or collect.

<b>“Topsoil”</b>	refers to the surface layer of a soil profile which is usually more fertile, darker in colour, better structured and supports greater biological activity than underlying layers. The surface layer may vary in depth depending on soil forming factors, including parent material, location and slope. It is generally not greater than about 300mm depth from the natural surface.
<b>“Unrestricted Crown land”</b>	(from MRSD Act) means any Crown land (whether reserved or not) other than: a) land to which paragraph (a) or (b) of Section 6 of the MRSD Act applies; or b) restricted Crown land.
<b>“Waterway”</b>	(from MRSD Act 1990) means — a) a river, creek, stream or watercourse the name of which is registered under the <i>Geographic Place Names Act 1998</i> ; or b) a natural channel the name of which is registered under the <i>Geographic Place Names Act 1998</i> in which water regularly flows, whether or not the flow is continuous; or c) a lake, lagoon, swamp or marsh, being — (i) a natural collection of water (other than water collected and contained in a private dam or a natural depression on private land) into, through or out of which a current that forms the whole or part of the flow of a river, creek, stream or watercourse passes, whether or not the flow is continuous; or (ii) a collection of water (other than water collected and contained in a private dam or a natural depression on private land) that the Governor in Council declares under section 4(1) of the <i>Water Act 1989</i> to be a lake, lagoon, swamp or marsh; or d) land which is regularly or intermittently covered by water from a waterway as described in paragraph (a), (b) or (c) but does not include — (i) any artificial channel or work which diverts water away from such a waterway; or (ii) an area covered by the floodwaters of a waterway; or (iii) an area, other than the waterway, designated on a planning scheme as being a floodway or liable to flooding or as being subject to inundation; or e) if any land described in paragraph (d) forms part of a slope rising from the waterway to a definite lip, the land up to that lip.

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# APPENDICES

## APPENDIX 1: RELEVANT LEGISLATION AND POLICIES

The following summary of legislation and policies should be used as a guide only. It is important to regularly check the following web pages for amendments and news relating to legislation, regulation and policies in Victoria.

*Victoria Government Gazette* – [www.gazette.vic.gov.au/](http://www.gazette.vic.gov.au/)

Victorian Legislation and Parliamentary Documents – [www.legislation.vic.gov.au/](http://www.legislation.vic.gov.au/)

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### *Aboriginal Heritage Act 2006*

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This Act provides for the protection of Aboriginal cultural heritage in Victoria. The objectives of this Act are:

- > to recognise, protect and conserve Aboriginal cultural heritage in Victoria in ways that are based on respect for Aboriginal knowledge and cultural and traditional practices;
- > to recognise Aboriginal people as the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage;
- > to accord appropriate status to Aboriginal people with traditional or familial links with Aboriginal cultural heritage in protecting that heritage;
- > to promote the management of Aboriginal cultural heritage as an integral part of land and natural resource management;
- > to promote public awareness and understanding of Aboriginal cultural heritage in Victoria;
- > to establish an Aboriginal cultural heritage register to record Aboriginal cultural heritage;
- > to establish processes for the timely and efficient assessment of activities that have the potential to harm Aboriginal cultural heritage;
- > to promote the use of agreements that provide for the management and protection of Aboriginal cultural heritage;
- > to establish mechanisms that enable the resolution of disputes relating to the protection of Aboriginal cultural heritage;
- > to provide appropriate sanctions and penalties to prevent harm to Aboriginal cultural heritage.

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### *Australian Heritage Council Act 2003 (Commonwealth)*

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This Act sets out the steps for entering places on the National Heritage List and the Commonwealth Heritage List, management of national and Commonwealth heritage places, requirements for impacts of proposals involving national heritage places and requirements for Commonwealth agencies in relation to Commonwealth heritage places.

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### *Catchment and Land Protection Act 1994*

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This Act aims to:

- > set up a framework for the integrated management and protection of catchments;
- > encourage community participation in the management of land and water resources;
- > set up a system of controls on noxious weeds and pest animals.

Catchment Management Authorities (CMAs), established under the Act, are responsible for the development and co-ordination of approved regional catchment management strategies. These strategies may address issues such as salinity, pest plants and animals, nutrient inflows to streams and declining biodiversity.

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### *Crown Land (Reserves) Act 1978*

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This Act provides for the reservation of Crown lands for certain purposes and for the management of such reserved lands. Many reserved lands are restricted Crown land for the purposes of the MRSD Act.

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### *Dangerous Goods Act 1985*

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This Act addresses the safety of persons and property in relation to the manufacture, storage, transport, transfer, sale and use of dangerous goods and the import of explosives into Victoria.

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### *Environmental Effects Act 1978*

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This Act provides for the minister administering the Act to decide whether any proposed development requires an Environment Effects Statement (EES). It is unlikely that an exploration project would require an EES.

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### *Environment Protection Act 1970*

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This Act is concerned with all aspects of the environment and makes provision for the establishment of environmental objectives as well as management of waste discharges.

The EP Act aims to:

- > encourage waste avoidance, reduction and re-use;
- > control emissions of waste into the atmosphere and on land and water;
- > impose sanctions against those who have polluted.

The EP Act provides for the preparation of State Environment Protection Policies (SEPPs) which set quality objectives for segments of the environment such as air, water and land and noise emissions. The provisions of SEPPs apply to government departments, agencies and private companies. They provide a basis for the application of works approvals, licences, pollution abatement notices and regulations.

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### *Statutory policies and guidelines that particularly relate to the code are:*

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- > SEPP (Air Quality Management) 2001
  - > SEPP (Waters of Victoria) 2003
  - > SEPP (Groundwaters of Victoria) 1997
  - > SEPP (Prevention and Management of Contaminated Land) 2002
  - > SEPP (Control of Noise from Commerce, Industry and Trade) No. N-1, which applies to Melbourne Metropolitan region. The guideline which contains EPA's recommendations for industrial noise in country Victoria is the Noise from industry in regional Victoria, 2011.
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### *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*

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This Act provides for the protection of the environment (including biodiversity and cultural heritage values), especially those aspects of the environment that are matters of national environmental significance. Under the Act, Commonwealth 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).

The Act provides for the listing of nationally threatened native species and ecological communities, and also the listing of nationally significant cultural heritage sites.

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### *Flora and Fauna Guarantee Act 1988*

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This Act establishes a legal and administrative structure to enable and promote the conservation of Victoria's native flora and fauna and to manage potentially threatening processes. It provides a list of species and communities of flora and fauna that are threatened and mechanisms for their protection. A permit is required to undertake works on public land which might kill, injure or disturb protected native plants. In most cases, a licence or permit is not required for works or activities on private land.

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# APPENDICES

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## *Forests Act 1958*

This Act provides for the management and protection of state forests, defines the powers of the secretary and the power to issue leases and licences, places restrictions on the cutting or removing of timber or forest produce, and makes provision for other forest-related matters.

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## *Radiation Regulations 2007*

The objectives of these regulations are to protect persons and the environment from exposure to ionizing radiation to the maximum extent possible while recognising the need for use of radiation for medical, research and industrial purposes (including mining).

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## *Heritage Act 1995*

This Act provides for the protection and conservation of places and objects of cultural heritage significance and the registration of such places and objects. Places of significance may include buildings, precincts, trees, gardens, industrial structures and machinery, archaeological relics, moveable historic objects associated with heritage places and cemeteries. Features of cultural heritage significance throughout the historic 19th century goldfields in Victoria include mullock heaps, tailings dumps, mining machinery and / or machinery foundations, hut sites, tracks and sometimes the landscape.

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## *Mineral Resources (Sustainable Development) Act 1990*

The purpose of this Act is to encourage mineral exploration and economically viable mining and extractive industries which make the best use of, and extract the value from, resources in a way that is compatible with the economic, social and environmental objectives of the State. Its objectives include encouraging and facilitating exploration for minerals and establishing a legal framework to ensure that mineral resources are developed in ways that minimise impacts on the environment. The framework also promotes effective consultation mechanisms, the need for appropriate access to information for land that is being mined and / or rehabilitated. The Act also provides for conditions on licences and approvals as well as enforcement.

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## *Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2013*

The *Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2013* prescribe the necessary detail required to support the operation of the *Mineral Resources (Sustainable Development) Act 1990*. These regulations prescribe royalties, fees, forms, procedures and information required in documents. They also prescribe certain offences to be mining infringements for the purposes of the Act. The regulations also set out requirements relating to the marking out of licence areas, and requirements for people who are required to disclose interests under the Act.

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## *National Parks Act 1975*

This Act makes provision for the management of national and other parks and the appointment of a National Parks Advisory Council and park advisory committees. It also provides for specialised cases and activities, including those of a non-conforming nature.

Exploration may occur in national and state parks under certain limited circumstances and subject to consent from the Minister for Environment under section 40 of the *National Parks Act 1975*.

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## *Native Title Act 1993 (Commonwealth)*

This Act has a number of functions including setting up processes through which native title can be recognised and providing protection for native title rights and interests.

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## *Occupational Health and Safety Act 2004*

The objectives of this Act include: securing the health, safety and welfare of employees and other persons at work; eliminating, at the source, risks to the health, safety or welfare of employees and other persons at work; ensuring that the health and safety of members of the public is not placed at risk by the conduct or undertakings by employers and self-employed persons; and providing for the involvement of employees, employers, and organisations representing those persons, in the formulation and implementation of health, safety and welfare standards.

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### *Plant Biosecurity Act 2010*

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This Act provides the framework for the prevention, monitoring, control and eradication of plant pests and diseases in Victoria. In addition to this, the Act provides for the packaging, labelling and description of plants and plant products and also facilitates the movement of plants, plant products, used packages, used agricultural equipment and soil within, into, and out of Victoria.

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### *Prevention of Cruelty to Animals Act 1986*

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### *Domestic Animals Act 1994*

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A component of these acts relate to the transportation of domestic animals and their presence on private property.

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### *Reforms to Victoria's Native Vegetation Permitted Clearing Regulations - 2013*

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In September 2013, a planning scheme amendment introduced the Victorian Government's Reforms to Victoria's native vegetation permitted clearing regulations.

The reforms include amendments to various clauses of the Victoria Planning Provisions and a new incorporated document, *Permitted clearing of native vegetation – biodiversity assessment guidelines*. The guidelines outline the application, decision making and offset arrangements to meet the requirements of the reforms.

The guidance has been informed by the following principles:

- > ensuring the 'no net loss' objective is achieved;
  - > minimising any additional costs or delays for applicants as a result of changes to the application requirements wherever possible; and
  - > providing flexibility to permit holders to meet existing permit conditions in line with the reformed regulations.
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### *Safety on Public Land Act 2004*

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This Act provides for public safety in State forests by providing for the establishment and enforcement of public safety zones. These are declared for a range of purposes including the conservation of flora and fauna and timber harvesting. Licensees are permitted to operate in public safety zones unless there are specific circumstances which require their exclusion.

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### *Water Act 1989*

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The purposes of this Act include provision for the integrated management of all elements of the terrestrial phase of the water cycle, to promote the orderly, equitable and efficient use of water resources and to make sure that water resources are conserved and properly managed for sustainable use for the benefit of present and future Victorians.

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## APPENDIX 2: DESCRIPTION OF TYPICAL EXPLORATION ACTIVITIES

Mineral Exploration field work may typically include:

**Remote sensing:** This may involve the interpretation of satellite imagery, airborne or radiometric data or aerial photography to identify the topography, broad-scale geological formations or the geophysical properties of subsurface rocks. Remote sensing identifies broad targets for more detailed examination.

**Ground-based gravity and magnetic surveys:** Gravimeters and magnetometers are small portable instruments used to determine the geophysical properties of rocks. The surveys are either carried out on foot or with the aid of a light vehicle and are designed to further define broad geophysical features.

**Resistivity, induced polarisation and electromagnetic surveys:** These methods are used to differentiate the electrical properties of rocks. They use electronic equipment and interconnecting arrays of electrical cable to induce and measure an electrical response through a body of rock. The surveys are carried out on a grid pattern and may require the excavation of shallow holes up to 500mm deep and 1m square (although they are usually much smaller), which are sometimes lined with aluminium foil through which a mild electrical current is passed. Alternatively, metal probes may be used.

**Seismic surveys:** Shock waves are generated in the ground using either small explosive charges detonated below the surface, hand-held mechanical hammers or vehicle-mounted weights. Measurement of the time delay for the shock waves to reach an array of geophones, which are connected by cable to measuring instruments mounted in a vehicle, is used to differentiate the geophysical properties of subsurface rocks. The geophones are placed directly on the ground and do not require any excavations. When explosives are used, an auger may be used to drill shallow holes (typically only a few metres deep).

**Sampling – hand tools:** This includes local-scale geological mapping (involving the examination of rock outcrops using hand tools, such as geological hammers and hand picks) and geochemical sampling (involving the taking of small rock chip, soil or stream sediment samples, using hand-held equipment such as shovels or hand augers or sieves, or the taking of small samples of vegetation). Sampling with hand-held tools is usually carried out on foot. While the sample sites of geological surveys are often opportunistic (on encountering a prospective rock outcrop), geochemical surveys may involve either irregular surveys, such as taking small samples of stream sediments from a stream bed, or sampling on a regular grid pattern.

**Sampling – drilling:** Drilling is used to determine the nature and structure of the subsurface material and to obtain samples of rock and any potential mineralisation at depth. Drilling equipment ranges in size from hand-held power augers to large fixed rigs, but is usually mobile – mounted on a rubber-tyred or tracked vehicle or trailer. Drill holes are of varying depths and may be vertical or angled. Various mediums or fluids, ranging from air and water through to oil-based mud, may be used to assist drilling and the recovery of samples. Some drilling applications require the construction of level and compacted drill pads and / or drill sumps or mud pits. Drilling may be conducted both from the surface (either on existing tracks or in off-road locations) and from underground mines. A variety of drilling methods are available.

A power auger is usually employed where shallow drilling is required and may comprise a hand-held unit or a rig mounted on a small vehicle or trailer.

Some of the different drilling techniques / methods are as follows:

- > **Open-hole percussion, reverse circulation, air core and rotary air-blast drilling** usually involve a truck-mounted rig and a compressor to supply air for drilling and recovery of samples and at least one support vehicle. The noise of such drilling may be high in the immediate vicinity of the rig. Some dust may also be generated by this drilling method. There is usually little evidence that the drill hole has been drilled after backfilling. In instances where groundwater is encountered, or where water needs to be injected down the drill holes to recover samples, sumps may be required.

- > **Diamond drilling** involves the extraction of a continuous cylindrical core of rock. It is usually the slowest and most expensive form of drilling and often requires some site preparation, a supply of water and sumps for mixing and recovering drilling mud or fluids. The method generally requires the use of a vehicle-mounted drill rig and support vehicle.
- > **Rotary mud drilling** is most commonly used for deep stratigraphic investigation and petroleum exploration. The method involves circulation of thick drilling mud for drill hole stability and recovery of samples. It uses substantial quantities of mud, and requires water and sumps.
- > **Wide-diameter drilling** is most commonly used in the sampling of shallow alluvial deposits or coal, from which large samples are needed to give a reliable estimate of ore reserves. The method utilises bucket auger (or Calweld) drilling equipment, which is usually truck mounted. Drill holes are commonly up to 1.2m in diameter and up to 30m deep. The boring bucket is a cylindrical bit into which the sample is forced as the bit rotates. When full, the bucket is hoisted from the drill hole and the sample dumped on the surface. Drilling is usually conducted without drilling fluids, though water or drilling mud may be added to stabilise the drill hole.

**A drill rig** may operate at different positions for a period of a few hours to a few weeks, depending on the type of drilling, depth and number of holes.

**Bulk sampling** – re-processing of tailings: Samples of tailings and other materials from previous mining or mine sites are excavated, processed and analysed for mineralisation. Such sampling usually involves excavation and analysis of several tonnes of material.

**Bulk sampling** – costeaning and test pits: In this method, costeans (a type of trench) or test pits are excavated to investigate geological features and obtain material for sampling. Bulk samples are generally used to further test the grade of the ore and can range from a few tonnes to thousands of tonnes.

- > Trenches can range in width from 150mm to as wide as the available earth-moving equipment (usually a backhoe or excavator, but may also include a bulldozer) and be up to several metres deep and several hundred metres long. A rapid trenching machine or ditch witcher (commonly used in laying underground telephone or power cables) is often used to excavate very narrow and shallow (up to about 1m-deep) trenches. Ditch witch trenching distributes the excavated material along each side of the trench, from where it can be sampled. Excavators or backhoes produce larger trenches but enable separation of topsoil and subsoil. Bulldozers may also be used.
- > In some cases, such as mineral sand projects, large test pits may be excavated to provide more detailed information about the geology, geochemistry and geotechnical properties of the ore and overburden. This data is used to investigate the feasibility of proposed mining and mineral processing methods prior to proceeding to a full-scale mining operation. Such pits may be tens of metres deep and several hectares in area.
- > Bulk samples may also be obtained from shafts (sometimes an old existing shaft may be used).

**Underground exploration and development:** This includes underground sampling from shafts and adits, drilling and mine construction, as well as associated surface works. It does not include commercial mining.

## APPENDIX 3: LOW IMPACT EXPLORATION ASSESSMENT CHECKLIST

If any of the following criteria are ticked yes, then the activity is not considered to be low impact exploration and a work plan will be required.

Does your activity involve:	Meets criteria? (tick if yes)	Comments/ assessment details
The use of explosives?		
The taking of flora listed under section 10 or Schedule 2 of the <i>Flora and Fauna Guarantee Act 1988</i> , unless that flora is taken from private land that is not owned by a public authority?		
The taking of flora from a community listed under section 10 or Schedule 2 of the <i>Flora and Fauna Guarantee Act 1988</i> , unless that community is found on private land that is not owned by a public authority?		
The taking of fauna listed under section 10 or Schedule 2 of the <i>Flora and Fauna Guarantee Act 1988</i> ?		
The taking of any taxon or community of flora or fauna from any habitat or parts of habitat under section 20 of the <i>Flora and Fauna Guarantee Act 1988</i> ?		
The removal or damaging of more than 1 hectare of native vegetation if that area does not contain any native trees during either the term of the licence or a period of 5 years from the grant of the licence, whichever ends first?		
The removal or damaging of more than 15 native trees that have a trunk diameter of less than 40 cm at a height of 1.3 metres above ground level during either the term of the licence or a period of 5 years from the grant of the licence, whichever ends first?		
The removal or damaging of more than 5 native trees that have a trunk diameter of 40 cm or more at a height of 1.3 metres above ground level during either the term of the licence or a period of 5 years from the grant of the licence, whichever ends first?		
The creation of any road, structure or hardstand area without the consent of the owner or occupier of the land on which it is created?		
The use of any closed road without the consent of the owner or occupier of the land on which the road is located or undertaking works on any road without the consent of the owner or occupier of the land on which the road is located?		
Ground intrusive work that: <ol style="list-style-type: none"> <li>1. is within 200m of a waterway? or</li> <li>2. is on a slope steeper than 1 vertical : 3 horizontal? or</li> <li>3. is of greater than 2 hectares in an area of cultural heritage sensitivity during either the term of the licence or a period of 5 years from the grant of the licence, whichever comes first? or</li> <li>4. involves taking water from an aquifer, hydraulic fracturing, or excavation using heavy earth moving equipment?</li> </ol>		

## APPENDIX 4: BOX-IRONBARK REGION

Mineral exploration on Crown land in the Box-Ironbark region of the state must comply with the government-approved recommendations set out in the Box-Ironbark Forests & Woodlands Investigation, ECC 2001 in addition to the other conditions specified in the code.

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### General principles (ECC 2001)

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Low-impact exploration as defined in ECC (2001) and described below, has a **different** meaning to the definition under the MRSD Act.

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- > Removal of native vegetation should be minimised.
  - > As a planning principle, surface mining should not be precluded, but preference should be given to underground mining.
  - > Prior to approval, proposals to clear vegetation on public land for mining should informally, but explicitly compare the expected benefit to the community with the value of the natural, cultural, historic and recreation values to be lost.
  - > Locate drilling sites on or adjacent to existing tracks, where possible.
- 

### Key elements of low-impact exploration (ECC 2001) are:

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- > Preliminary assessment of vegetation and fauna habitat to identify and mark areas or sites to be avoided during exploration works.
- > An assessment of historic and Aboriginal cultural values.
- > Drilling sites located on or adjacent to existing tracks, where possible.
- > Foot traffic around works areas being confined to existing tracks, or duckboards or similar structures if necessary, being installed to protect vegetation and minimise soil compaction.
- > Washing down earthmoving equipment prior to entering works area to minimise risks of introducing pollution and exotic organisms.
- > After exploration, all introduced materials removed, drill holes capped, and leaf litter spread over drill hole sites.

More information about the Box-Ironbark recommendations is available from the website: [www.veac.vic.gov.au](http://www.veac.vic.gov.au)

## APPENDIX 5: ENVIRONMENTAL INCIDENT RECORDING PRO FORMA

LICENCE NO	LICENSEE
<b>INCIDENT DESCRIPTION</b>	(for example, Fuel Spill from generator number 1)*
<b>DATE AND TIME OF INCIDENT</b>	(for example, Jan 1, 2001 @ 17:52)*
<b>REPORTING OFFICER</b>	(for example, Joe Bloggs)*
<b>DURATION OF INCIDENT</b>	(for example, estimated 35 minutes)*
<b>VOLUME AND CONCENTRATION DISCHARGED</b>	(for example, dilution ratio should be approximately 5 litres of 50:50 fuel to sump oil)*
<b>REPORTABLE CONTACTS AND TIME OF REPORT</b>	(for example, ERR inspector Sally Dontes @ 18:05, EPA officer Jane Smith @ 18:15)*
<b>SUSPECTED CAUSE OF INCIDENT</b>	(for example, Seals on flange connection failed causing leak during operation)*
<b>CHANGE IN PROCEDURES TO AVOID RECURRENCE OF INCIDENT</b>	(for example, Drip trays distributed to all generators and placed in appropriate location. Mechanics assigned responsibility to ensure that drip tray in place.)*

### Immediate action taken

(for example, Arrested spill at source, applied absorbent material, isolated area from potential spreading. Used earth moving equipment to contain contaminated soil in lined bin. Made preparation for disposal to licensed facility.)\*

#### Notes:

1. List any environmental or near-miss incidents; any occurrences of non-compliance with the licence conditions, work plan or code, and related complaints.
2. Attach additional sheets as necessary. Include the prospecting, exploration, retention or mining licence number and date at the head of each sheet.

\*Examples only.



## APPENDIX 6: ENVIRONMENTAL MONITORING PRO FORMA

LICENCE NO

LICENSEE

Data and information	Method of record keeping to be used				Frequency
	Site plan	Journal	Photographs	other	
Topsoil stripping and stockpiling (for example, a record of topsoil stock piles, locations and age).					
Area disturbed and rehabilitation (for example, a map of the area of disturbance and photos of rehabilitation).					
Pre and post-mine landform (for example, photographs of the area prior to and following mining).					
Water discharge quality (for example, note colour of discharge water from sediment dams).					
Dam maintenance (for example, a record of dam maintenance such as sediment removal).					
Record of complaints (for example, air, noise, tracks etc – such as a record in a journal of any complaints received by adjoining landowner, actions taken and the outcomes of the action).					
Site-specific conditions (for example, a record of monitoring to demonstrate compliance with any site-specific conditions).					
Remediation of contaminated land (for example, a record of current and remediated contaminated land).					
Waste management (for example, a record of waste taken to a regulated waste collection depot).					
Rehabilitation quotes, estimates and actual costs.					
Area of native vegetation removal.					
Area of cultural heritage sensitivity disturbance.					
<b>Others – relevant to performance category.</b>					



## APPENDIX 8: REHABILITATION PRO FORMA

COMPLAINTS

YEAR ENDING 30 JUNE

LICENCE NO

LICENSEE

### EXPLORATION SITE DESCRIPTIONS:

Site No.	Area of exploration or rehabilitation work undertaken	Approval date for current work plan	GPS coordinates	Land tenure status	Date exploration work completed	Rehabilitation status			Follow-up or monitoring dates
						Yes / No	Comments	Finish Date	

MAPS AND PHOTOGRAPHS ARE TO BE INCLUDED FOR EACH SITE REPORT – see overleaf for explanatory notes.

Licensee Declaration: I declare that to the best of my knowledge, all the information I have given is true and correct.

NAME .....

DATE

SIGNATURE .....

POSITION

## APPENDIX 8 (CONT.): REHABILITATION PRO FORMA NOTES TO USER

### ATTACHMENTS TO BE INCLUDED WITH EACH ANNUAL REPORT:

#### 1. Map (based on the 1:100 000 mapsheet(s) used for the licence application) with an appropriate reference system to indicate the locations of:

- > sites still active at the end of the reporting period.
- > sites rehabilitated during the reporting period.
- > sites remaining to be rehabilitated at the end of the reporting period.
- > total sites rehabilitated during the period of the licence.

#### 2. Certified photographs of site condition for representative sites:

- > pre-exploration (before the site is disturbed by any activity related to the exploration program).
- > pre-rehabilitation (after completion of exploration activities).
- > post-rehabilitation (to be reported for each period until monitoring indicates that rehabilitation is successful).

### NOTES TO ASSIST YOU TO COMPLETE THE TABLE:

Note No.	Column	Notes / Explanation
<b>1</b>	Site No.	The reference (numbering) system should enable cross-referencing of the map locations and site photographs required above with the site descriptions provided in the table.
<b>2</b>	Area of exploration or rehabilitation work undertaken	Describe the exploration works to be rehabilitated such as drill pads or drill sites, costeans, tracks (give dimensions) and stream crossings.  Describe the form of rehabilitation undertaken (including how drill holes were decommissioned, if appropriate).
<b>3</b>	Approval date for current work plan	Date of last revision or variation of exploration work plan relevant to this rehabilitation.
<b>4</b>	GPS coordinates	The coordinates should be compliant / compatible with the mapping datum – Geocentric Datum of Australia 1994 (GDA94). The compatible map datum for stand-alone GPS receivers (where the positions are not corrected to the GDA94 reference stations) is WGS84.
<b>5</b>	Land tenure status	For private land, include the name of the landowner / occupier as set out in the compensation agreement.
<b>6</b>	Date exploration work was completed	Date on which exploration activities ceased and rehabilitation work could begin.
<b>7</b>	Rehabilitation status	'Y' (yes) means that rehabilitation is completed. If, for instance, a drill hole has been temporarily capped pending further work, the status would be 'N' (no). Provide the date when rehabilitation was completed / is being completed.
<b>8</b>	Follow-up or monitoring dates	Describe any monitoring requirements such as establishment of vegetation.





