



Government of **Western Australia**  
Department of **Mines and Petroleum**



DRAFT GUIDELINE  
FOR THE DEVELOPMENT OF  
PETROLEUM AND GEOTHERMAL  
ENVIRONMENT PLANS IN  
WESTERN AUSTRALIA

February 2016

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## FOREWORD

A key area of the Department of Mines and Petroleum's (DMP) Reforming Environmental Regulation (RER) initiative is to provide a framework for risk and outcome-based decision making. This will ensure that regulatory effort by the department is targeted and proportionate and will protect environmental values in an effective, efficient and timely manner as well as supporting community and stakeholder expectations for responsible development.

DMP is committed through its RER program to implementing ongoing improvements for transparency in relation to the public disclosure of information. This draft guideline supports this initiative by improving transparency around the expectations of DMP on the petroleum and geothermal industry.

This draft guideline also aims to assist petroleum and geothermal operators to develop, and obtain approval for, an Environment Plan in accordance with the Petroleum and Geothermal Energy Resources (Environment) Regulations 2012, the Petroleum (Submerged Lands) (Environment) Regulations 2012 and the Petroleum Pipelines (Environment) Regulations 2012.

This guideline will supersede the *Guidelines for the Preparation and Submission of an Environment Plan (August 2012)* and has been amended to provide further guidance on regulation requirements and approvals process and clarify DMP expectations.

DMP is committed to meaningful engagement with stakeholders when implementing change. Your comments are invaluable and I would therefore encourage you to read this draft guideline and to submit your comments on this proposal.



**Phil Gorey**

EXECUTIVE DIRECTOR ENVIRONMENT

5 February 2016

# 1 INTRODUCTION

The Department of Mines and Petroleum (DMP) is responsible for regulating resource exploration and production in Western Australia (WA) and ensuring that environmental and safety standards are consistent with State legislation, regulations and policies.

Petroleum and geothermal exploration and production activities (petroleum activities) undertaken throughout WA are regulated by DMP under the:

- *Petroleum and Geothermal Energy Resources Act 1967* (PGERA) which applies to all onshore areas in WA, including its islands and, in certain circumstances, areas of submerged lands internal to the State (ie. those waters landward of the baseline).
- *Petroleum (Submerged Lands) Act 1982* (PSLA) which applies to petroleum resources located within WA's territorial sea (including the territorial sea around State islands) and includes related pipelines.
- *Petroleum Pipelines Act 1969* (PPA) which applies to the construction, operation and maintenance of pipelines for the conveyance of petroleum on land within the State.

The protection of the environment while undertaking petroleum activities is of extreme importance to the State. The Petroleum and Geothermal Energy Resources (Environment) Regulations 2012, the Petroleum (Submerged Lands) (Environment) Regulations 2012 and the Petroleum Pipelines (Environment) Regulations 2012, collectively referred to as 'the Regulations' in this document, are subsidiary legislation to the above acts and provide specific environmental requirements for operators to comply with.

The objective of the Regulations is to ensure that any petroleum activity carried out in the State is:


- carried out in a manner consistent with the principles of ecologically sustainable development
- carried out in accordance with an Environment Plan that:
  - demonstrates the environmental impacts and environmental risks of the activity will be reduced to 'As Low As Reasonably Practicable' (ALARP)
  - has appropriate environmental performance objectives and environmental performance standards
  - has appropriate measurement criteria for determining whether those objectives and standards have been met.

The Regulations are objective, risk based and encourage the adoption of leading practice environmental management systems and continuous improvement management strategies to ensure environmental impacts and risks are acceptable and reduced to ALARP.

**ALARP can be defined as the point where the cost involved in further reducing the environmental impacts and risks of the activity would be highly disproportionate to the environmental benefit gained. This principle arises from the reality that resources are finite and should focus on reducing the environmental impacts and/or risks that will deliver the best environmental outcomes possible.**

Objective based regulation places responsibility on the petroleum operator to meet the requirements and objectives of the legislative framework. It also encourages continuous improvement in all aspects of an operator's environmental performance which ensures the relevance, currency and ongoing appropriateness of the management controls and practices implemented.





It also allows operators to adapt environmental management practices as new information and new technology, improved environmental management practices and industry standards become available.

The Regulations require the nominated operator to gain DMP approval for, and comply with, an approved Environment Plan (EP). In order to be approved, an EP must meet legislative requirements and DMP expectations, be appropriate for the nature and scale of the activity, and reduce all potential impacts and risks to ALARP and acceptable levels.

**Under regulation 8, an activity must not continue if new or increased environmental impact or environmental risk is identified. In these circumstances a revised EP must be submitted and approved by DMP prior to continuing the activity.**

The specific regulatory requirements of an EP are outlined in the Regulations. This guideline provides further information about the level of detail which is required to be included within the EP submitted to DMP for assessment. During assessment, DMP will determine whether the proposed activity is consistent with the objectives of the Regulations and meets regulatory requirements and DMP expectations.

While developing an EP the operator must consider all relevant legislation that may be applicable to that proposal. DMP's Environment Division may be able to provide advice to the operator regarding their legislative requirements, however, it is the operator's responsibility to ensure that all approvals have been obtained prior to the commencement of the activity and that all activities comply with relevant legislation.

Operators are encouraged to meet with DMP officers prior to the submission of an EP to discuss their proposed plans.

## 2 PREPARATION OF AN ENVIRONMENT PLAN

### 2.1 Nomination of Operator (Regulation 37)

An operator is defined in the Regulations as the person responsible to the instrument holder for the overall management and operation of an activity. The operator is the person, or entity, that has authorisation on behalf of the titleholders to submit and gain approval of the EP from DMP.

Part 5 of the Regulations requires the instrument holder(s) to notify DMP in writing of the contact details of the operator before the first submission of an EP. The instrument holder(s) must ensure that there is an operator of the activity at all times. The operator must also notify DMP and resubmit a nomination of operator if there are any changes of instrument holders or details.

A document signed by all instrument holder(s) must be submitted to DMP nominating the operator for the activity. The document must be provided before or at the time of the first submission of the EP and include the contact details for the instrument holder(s) and the operator including:

- instrument holder(s) / operator names and Australian Business Number(s)
- instrument Titles / Permit numbers
- contact person and position or delegated representative (on behalf of joint ventures / partnerships)
- email addresses
- telephone numbers
- mailing addresses.

The nomination of an operator does not remove any duty or responsibility of the instrument holder(s) for activities undertaken.

### 2.2 The Environment Plan (Regulation 6)

The objective of an EP is to ensure petroleum activities are carried out in a manner consistent with the principles of ecologically sustainable development. It also aims to provide a management tool to identify and manage potential impacts and risks associated with the activity. All activities are to be undertaken in accordance with an EP that has appropriate risk based environmental performance objectives and standards and provides criteria for determining whether the objectives and standards are met. Operators must ensure that best practice environmental management standards are implemented at all times. Operators are also encouraged to research and implement continual improvement initiatives that are innovative and effective environmental protection measures which also meet operational requirements. As a result, changes to the EP may be required from time to time resulting in the submission of a revised EP to DMP (Section 2.3).

An EP is required for all stages of a petroleum activity including construction, operation, care and maintenance, decommissioning and rehabilitation. An EP may be submitted for each stage of an activity. Alternatively an EP may cover multiple stages of an activity and/or may incorporate multiple repetitive activities where they are:

- carried out by the same operator; and
- located within the same geographical area (having similar environmental values and significance); and
- of the same nature (such as a multiple well drilling program).



The EP submitted to DMP must be appropriate to the nature and scale of the activity. Table 1 provides guidance to operators for typical stages of a petroleum activity and the inclusion of this information within an EP, however discussion with DMP is advised prior to submission.

**Table 1: Example of Potential Stages of an Activity to be Covered in an EP**

Activity	Seismic / Surveys	Wells	Facilities and Pipelines
<b>Stages under EP</b>	All stages of the activity to be incorporated within a single EP  e.g. exploration through to completion of rehabilitation.	All stages of the activity to be incorporated within a single EP  e.g. exploration through to completion of rehabilitation.	The following stages can be covered within a single EP or divided into multiple EPs: <ul style="list-style-type: none"> <li>• construction</li> <li>• operation</li> <li>• care and maintenance</li> <li>• decommissioning and</li> <li>• rehabilitation.</li> </ul>

### 2.2.1 Document Control

An EP must be clearly identifiable with an appropriate title, document number, date and sequential revision number. These details are particularly important as revisions of the document may be provided to DMP during the assessment process. As the approved version of the EP constitutes a legally binding document, the approved revision number must be clearly identifiable. If DMP requests modification and resubmission of a document, the operator must update the revision number prior to resubmission.

Operators must use the revision of the EP that is approved by DMP. Any material changes to the EP made by the operator must be submitted to DMP for re-approval (see Section 2.3).

DMP recommends displaying document control information in a table such as the example provided in Table 2.

**Table 2: Document Control Example**

<b>Operator Name:</b>	Petroleum Exploration Pty Ltd
<b>Document Title:</b>	Field Exploration Drilling Well-01
<b>Document Type</b>	EP
<b>Document Number:</b>	PE-FEW01-EP-001
<b>Current Revision:</b>	4
<b>Current Version:</b>	4a or 4.1

## 2.3 Requirement for Revisions and Change Management (Regulation 8)

It is an offence under the regulations if an activity is carried out in a way that is contrary to the EP approved by DMP. It is recommended the operator ensures that the information and commitments within the EP are relevant and practical for implementation onsite. The operator of an activity must submit a proposed revision of the EP to DMP where:

- A new activity is proposed which is not provided for in the EP
- Any significant modification of, change in, or new stage of an activity is proposed to commence which is not provided for in the EP.
- There is a change in the instrument holder or operator of the activity.
- New or increased environmental risks or impacts associated with the activity have been identified.
- DMP formally requests a revised EP from the operator.
- An EP has been in place for five years.
- An Oil Spill Contingency Plan (OSCP) has been in place for two and a half years.
- The operator makes material changes to environmental management systems, processes, standards, mitigation measures, environmental performance objectives, standards, measurement criteria, etc.

Administrative changes to the EP (i.e. correction of contact phone number(s)) do not require resubmission of the EP to DMP. However, the EP must contain a record of the management of change process undertaken by the operator and all administrative changes should be tracked on this record and produced to DMP upon request. Document control must show this as a version of the approved EP (i.e. Revision 3, Version 1). This administrative change cannot impact on how the activity is undertaken or effect a change to the material content of the EP.

Where minor changes to the activity are required with no significant increase in environmental impacts or risks, DMP may agree to the submission of an amendment to the EP. This should be discussed with an Environmental Officer prior to the development or submission of an amendment document so that an agreement can be confirmed.

### 3 ENVIRONMENT PLAN CONTENTS

The structure and content of an EP is based on the requirements of the Regulations.

The EP must identify any actual or potential environmental impacts of the proposed activity(s) and define the process that the operator will implement to identify, minimise, monitor, manage, and mitigate the actual and potential impacts. A comprehensive EP will facilitate the assessment process by providing sufficient information to determine the level of environmental risk and ensure that adequate management measures are in place to reduce all risks to ALARP. The content and level of detail required in an EP will depend on the number and significance of environmental impacts and risks associated with the proposal.

This Guideline provides further information about the level of detail required within the EP to ensure that the requirements of the Regulations and DMP expectations have been met.

An EP must include the following information:

- A comprehensive description of the activity (Section 3.1).
- A description of the existing environment that may be affected by the activity during planned activities and unplanned events (Section 3.2).
- Identification of environmental impacts and risks of the activity (Section 3.3).
- Assessment of identified environmental impacts and risks including mitigation measures to ensure that the environmental performance objectives and environmental performance standards in the EP are met and that impacts and risks are minimised to ALARP (Section 3.3).
- Environmental performance objectives, standards and measurement criteria (Section 3.4).
- A description of the requirements that apply to the activity under legislation (including referrals and conditions imposed under legislation), international conventions or agreements, or applicable codes of practice (Section 3.5).
- An implementation strategy (Section 3.6) to ensure that the environmental performance objectives and environmental performance standards in the EP are met, including:
  - specific systems, practices and procedures
  - chain of command including roles and responsibilities
  - measures to ensure that personnel are aware of their responsibilities and have the appropriate competencies and training
  - monitoring, audit and management of noncompliance
  - monitoring of emissions and discharges
  - details of any chemicals or other substances that may be used for the purposes of drilling or hydraulic fracturing or otherwise introduced into a well, reservoir or subsurface formation
  - an OSCP (this may be part of or separate to the EP)
  - details of the implementation of the stakeholder engagement strategy including specific details of the consultation undertaken and arrangements for ongoing consultation.
- Monitoring, recording and reporting arrangements (Section 3.8) including a list of all incidents that are classified as reportable incidents in relation to the activity (Section 3.8.3.1).
- A statement of the operator's corporate environmental policy (Section 3.6.2).

## 3.1 Description of the Activity (Regulation 14(1))

The EP must contain a comprehensive description of the activity. The objective of this requirement is to provide details of the activity which are relevant to its interaction with the environment, including key elements and operational phases. This allows DMP to verify that the assessment of the environmental impacts and risks is comprehensive and appropriate to the activity. This should include:

- location(s) of the activity
- details of the construction and layout of any facility
- description of the operational details of the activity including details of the various phases of the activity (where relevant) e.g. care and maintenance, decommissioning, remediation, rehabilitation
- timeframes and schedules
- any additional information relevant to the consideration of environmental impacts and risks of the activity.

### 3.1.1 Location

The location of the proposed activity must be adequately described in the EP. Location details should include coordinates of the activity and the identification of relevant petroleum Permit/Title(s), landmarks, population centres and environmentally significant features. The EP should specifically detail the distance and direction to each feature and identify if there is potential for these to be impacted as a result of the activity.

#### 3.1.1.1 Mapping

The EP must provide clear maps and figures to demonstrate the location of the activity in relation to the items identified in the location description (Section 3.1.1) and the description of the environment (Section 3.2). Maps and figures should include where relevant (but not be limited to):

- aerial imagery (if available)
- scale bar, north arrow and legend
- Permit / Title boundaries and labels
- freehold (private) land lots and relevant cadastral information
- towns and locations of sensitive receptors (e.g. houses, camps, pastoral stations, other industries) in proximity to the activity
- topographic/bathymetric features
- location of proposed activities and disturbance footprint
- previous disturbance within permit (e.g. existing tracks/access, wells, facilities)
- reserves, conservation areas, and national parks (including existing and proposed areas)
- surface and groundwater areas
- Public Drinking Water Source Areas
- location of all water bores and dams (licensed and unlicensed) in proximity to the activity
- Aboriginal, European or other heritage sites

- environmentally significant areas (e.g. Environmentally Sensitive Areas (ESAs), Threatened Ecological Communities (TECs), Priority Ecological Communities (PECs), rare and priority flora and fauna)
- vegetation and flora mapping
- fauna sightings and habitat mapping
- any other sites or sensitivities (i.e. geological, soil, dieback, quarantine areas).

### 3.1.2 Construction and Operational Details

The EP must include a description of all construction and operational aspects of the proposed activity in sufficient detail to provide an understanding of all potential environmental impacts and risks from the activity (including potential emergency situations). This should include at a minimum:

- name and description of facility, rig, vessels and major equipment
- names of contractors
- details of any new disturbance and use of existing disturbance
- a diagram and description of the proposed, or existing, site layout
- details of preparation and construction of site, including but not limited to:
  - clearing and stockpiling
  - excavations
  - water bores
  - site security
  - camp establishment and required infrastructure
  - facility and site establishment and required infrastructure.
- details of petroleum specific operations (i.e. seismic survey, drilling, pipeline, facility), including but not limited to:
  - seismic source and receivers
  - well construction and schematics
  - fluids and cuttings management
  - flaring and venting
  - trenching
  - pipelay
  - system processes and design.
- details of ancillary operational aspects of the activity, including but not limited to:
  - site access and transport
  - chemical and materials storage, handling, and transfers
  - quarantine and disease management
  - waste management.
- details of ongoing site management, including but not limited to:
  - monitoring and maintenance
  - care and maintenance activities (i.e. during well suspension).
- details of planned demobilisation and removal of infrastructure from site
- details of reinstatement, remediation, rehabilitation and ongoing monitoring.

### 3.1.2.1 Care and Maintenance

If the activity is not planned to be decommissioned and rehabilitated immediately upon completion, the EP must include details of the ongoing inspection, monitoring, and maintenance (care and maintenance) activities that will be undertaken to reduce environmental impacts and risks to ALARP during this period.

For example, a well may be suspended or a facility may be mothballed while the operator considers future economic viability. During this time, DMP expects that the site will be left in a state that poses minimal risk to the environment (e.g. drainage of storage tanks, removal of hazardous substances, contouring of excavations). Ongoing maintenance activities such as weed monitoring, groundwater monitoring and regular integrity testing (well, tanks, pipelines, equipment etc.) are still required to be undertaken and detailed within an EP.

A description of care and maintenance activities should therefore detail the immediate (e.g. well suspension, draining of tanks, site safety and security), mid-term (e.g. removal of dried sump material) and long-term actions (e.g. ongoing integrity testing and monitoring activities) to be undertaken by the operator.

Depending on the activity and period of care and maintenance, these activities may be included as a stage within the EP or submitted in a separate EP specific to this phase of the activity.

If care and maintenance is not adequately described in the EP approved by DMP, the operator must include a commitment that a care and maintenance EP will be submitted to DMP prior to the operational activities ceasing.

### 3.1.2.2 Decommissioning

The EP must detail how the site will be decommissioned upon completion of the activity and demonstrate that the chosen decommissioning methodology reduces all potential impacts and risks to ALARP. A description of decommissioning activities must be appropriate to the nature and scale of the activity and include details of the removal of all equipment, infrastructure and waste from the site. The EP must also describe the removal and management of any sumps, flare pits, water storage ponds, and other infrastructure constructed for the purpose of the activity. The description of decommissioning activities should also outline monitoring and testing regimes to be undertaken prior to rehabilitation (e.g. soil sampling for contaminants beneath sumps, flare pits etc.).

Depending on the nature and scale of decommissioning activities, these activities may be included as a stage within the EP or submitted in a separate EP that is specific to this phase.

If decommissioning is not adequately described in the EP approved by DMP, the operator must include a commitment that a decommissioning EP will be submitted prior to the commencement of decommissioning activities on-site.



### 3.1.2.3 Rehabilitation

While remediation and rehabilitation is required after the completion of any activity, DMP promotes the ongoing and progressive remediation and rehabilitation of cleared and disturbed areas that are no longer required for operational reasons. All EPs must detail remediation and rehabilitation activities to be undertaken including:

- pre disturbance state (baseline)
- rehabilitation objectives and completion criteria after a defined period
  - percentage vegetation cover
  - species richness
  - species diversity
  - percentage weed cover.
- location, management, and remediation of potential environmental issues e.g. erosion prone areas.
- details of how rehabilitation monitoring will be undertaken to ensure completion criteria have been met, including minimum monitoring timeframes and methods (e.g. photo monitoring, establishment of control sites, quadrat based assessments, subsequent surveying).
- contingency commitments in the event that completion criteria have not been met within the monitoring period and/or rehabilitation efforts have been unsuccessful
- a commitment for the remediation and rehabilitation of any areas impacted as a result of the activities undertaken onsite (e.g. due to spills, fire, excess clearing etc.)
- a commitment to report annually to DMP on rehabilitation progress for a minimum of two years and/or until rehabilitation objectives and completion criteria have been met.

The rehabilitation undertaken must be appropriate to the nature and scale of the activity and consider the existing land use and pre-disturbance state of the area. For long term activities, the operator should consider rehabilitation objectives, completion criteria and rehabilitation methods during the planning of the activity as early decisions may significantly impact on the success of rehabilitation.

Depending on the timeframe of the activity and the amount of rehabilitation required, these activities may be included as a stage within an EP or submitted in a separate EP specific to this phase.

If remediation and rehabilitation is not able to be adequately described in the activity EP submitted to DMP, the operator should include a summary of the planned rehabilitation and a commitment that a detailed rehabilitation EP will be submitted to DMP prior to operational activities ceasing onsite or the commencement of decommissioning activities onsite. This is to ensure rehabilitation will be undertaken in accordance with current industry best practice standards.

The EPA's Guidance Statement No. 6 – 'Rehabilitation of Terrestrial Ecosystems' is a useful reference that should be considered when planning onshore rehabilitation.

### 3.1.3 Timeframes and Schedules

In order to demonstrate that the impacts and risks of an activity are ALARP, the EP must include an outline of the activity timeframe (including an indicative timeframe, expected duration and hours of operations) with reference to environmental considerations as demonstrated in Table 3.

The proposed timeframe should also allow for potential delays during the activity e.g. adverse weather conditions, contractual delays with service providers etc. A schedule of operational stages should also be included for activities with long timeframes and/or multiple stages.

An activity must take place within the timeframe detailed in the EP and any changes to the timing of the activity must be addressed in a revision of the EP and approved by DMP.

**Table 3: Activity Timeframes and Environmental Considerations**

	<b>Example</b>	<b>Examples of Environmental Considerations</b>
<b>Timeframe</b>	Mar 2014 – Aug 2014	Fauna (migration, breeding, aggregation) Impacts of weather (rain affecting water storage capacity in sumps, fire restrictions). Impacts on other users (fisheries, cropping seasons etc.)
<b>Duration</b>	40 days	Cumulative impacts (e.g. waste production, dust generation, noise impacts to sensitive receptors).
<b>Hours of Operation</b>	24 hours (night and day operations)	Fauna impacts from driving at dawn or dusk Impacts to sensitive receptors (e.g. lighting impacts on turtle hatchings, nocturnal species).

## 3.2 Description of the Environment (Regulation 14(2))

An EP must describe the existing environment including any natural (biological/physical) values and sensitivities, heritage areas and socio-economic features that may be affected by the activity (Table 4). The description of the environment should therefore include any features of the environment that may be affected if the worst case scenario (incident) occurred (e.g. groundwater contamination, well blowout, major oil spill, fire). This information is required to ensure that all environmental impacts and risks of the activity have been adequately identified and that the management to be implemented by the operator is appropriate to the environment in which the activity is being undertaken. Where relevant, the spatial relationship between the proposed activity and the identified environmental features should be identified on a map.

**Table 4: Environmental Values**

Natural		Heritage	Socio-economic
Physical	Biological		
Geography	Flora	Indigenous	Fisheries
Geology	Fauna	European	Shipping
Water resources	Habitat	Geoheritage	Tourism
Bathymetry	Communities	Shipwrecks	Agriculture
Oceanography			Industries
Climate			Recreational use

Details of desktop reviews undertaken, databases accessed for information, field surveys, monitoring programs and/or other research undertaken must also be included in the EP. In addition, all reports generated (desktop and field) should be included as appendices. Early consultation with relevant stakeholders will assist in this process and help to ensure that all relevant local and regional values and sensitivities are identified. Ideally, the description of the environment should be based on high quality, up-to-date field information (e.g. current flora and fauna surveys conducted during the appropriate season).

Monitoring or studies of local sensitivities should be undertaken to obtain baseline information where the potential environmental impacts and risks of an activity are uncertain. This may include, but is not limited to, modelling and/or monitoring of noise, air and water quality.

### 3.2.1 Natural Environment

Features of the natural environment should be described for the area that may be affected by the activity. The databases accessed should include at minimum:

- WA Biodiversity search (Naturemap) – Department of Parks and Wildlife (DPaW)  
[www.dpaw.wa.gov.au](http://www.dpaw.wa.gov.au)
- Australian Protected Matters Search Tool – Department of the Environment (DotE)  
[www.environment.gov.au](http://www.environment.gov.au)
- Geographic Data Atlas (Surface and groundwater) – Department of Water (DoW)  
[www.water.wa.gov.au](http://www.water.wa.gov.au)
- Weed and disease mapping – Department of Agriculture and Food  
[www.agric.wa.gov.au](http://www.agric.wa.gov.au)

Research should also include the identification of vegetation associations (including ESAs, TECs, PECs) and any other information required to describe the natural environment features of the area.

Where the clearing of native vegetation is required, on-ground flora and fauna surveys conducted by suitably qualified personnel are required. The level and timing of the survey should be based on a desktop study and be in accordance with the Environmental

Protection Authority (EPA) *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (Guidance Statement 51) and the *Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia* (Guidance Statement 56) which are available on the EPA [Website](#).

### 3.2.2 Heritage

The EP must describe the heritage values of the environment that may be affected by the activity including Indigenous, European and other heritage values. This should include details of any local groups, claims, sites or areas of significance and be included on a map. The implications of the activity on any values should also be detailed within the EP.

Desktop studies should include at a minimum:

- Aboriginal Heritage Inquiry System – Department of Aboriginal Affairs [www.daa.wa.gov.au](http://www.daa.wa.gov.au).
- Australian National Shipwreck Database – DotE – [www.environment.gov.au](http://www.environment.gov.au).
- State Heritage Register – Heritage Council – [www.stateheritage.wa.gov.au](http://www.stateheritage.wa.gov.au).
- Australian Protected Matters Search Tool referenced in Section 3.2.1 also provides information regarding National Heritage Places, Commonwealth Heritage Places, and World Heritage Properties.
- A geoheritage search using the DMP spatial database available on the DMP [Website](#).

The description of the environment should be based on high quality, up-to-date field information where relevant, in consultation with relevant groups and bodies.

### 3.2.3 Socio-economic Environment

The EP must detail the socio-economic environment including local towns, population centres, and land uses in the vicinity of the proposed activity, including industrial activities/facilities in the vicinity of the proposed activity (e.g. nearby seismic survey, drilling, facilities or industries etc.) so that cumulative impacts of these may be considered.

### 3.2.4 Values and Sensitivities

All specific local and regional environmental values and sensitivities should be included in the description of the environment where they haven't been identified in previous sections.

Sensitive environments may include, but are not limited to:

- cultural and heritage sites
- marine and terrestrial protected areas (including declared/proposed National Parks, Nature Reserves, Conservation Parks etc.)
- areas of protected, rare, or endangered flora and fauna
- areas of significant habitat (e.g. corals, seagrasses, mangroves, and wetlands)
- areas of temporal significance (including breeding grounds, migration routes, and resting and aggregation areas)
- Public Drinking Water Source Areas, groundwater dependent ecosystems, local groundwater use, and other important wetlands and waterways.

Environmental values and sensitivities should be well highlighted and discussed within the EP. They should also be considered a high priority when undertaking an environmental risk assessment, developing mitigation measures and implementing management protocols onsite (including personnel awareness training).

### 3.3 Environmental Risk Assessment and Management (Regulation 14(3))

The *AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines* defines risk management as ‘coordinated activities to direct and control an organisation with regard to risk’. The environmental risk management process is iterative, requires ongoing engagement with key stakeholders, and regular monitoring and review throughout the lifecycle of the activity to ensure continual improvement.

It is the operator’s responsibility to conduct an environmental risk assessment and demonstrate that all sources of risk arising from the proposed activities are identified and can be managed to minimise environmental impacts and risks to ALARP. This may include the elimination of the risk, or minimising the likelihood and/or consequence of the risk through substitution, isolation, engineering, administrative controls and/or protective equipment.

The *AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines* provides a guide for conducting risk assessments and the *HB 203:2012 Managing Environment-related Risk* provides specific guidance for conducting an Environmental Risk Assessment (ERA). Operators should refer to these guidelines and adopt the risk assessment strategies described to ensure that the ERA for the activities proposed is efficient, effective and robust.

DMP considers that Figure 1 outlines a suitable risk management framework.

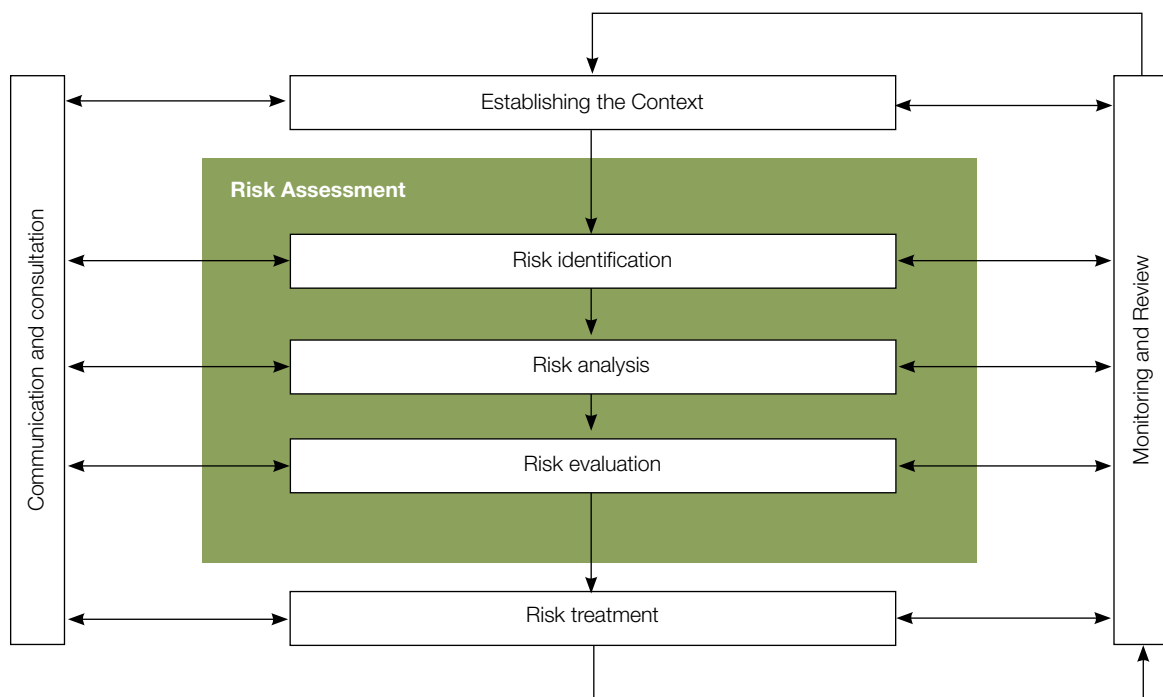


Figure 1: Risk Management Process ISO 31000:2009

The EP must demonstrate that the operator has evaluated the risks associated with the activity, and introduced appropriate mitigation measures that minimise the impacts and risks of the activity (using the hierarchy of controls) to ALARP in line with the requirements of the Regulations. To support demonstration of ALARP, DMP recommends that the ERA details both inherent risk and residual risk, which are defined in Table 5 below.

**Table 5: Useful Environmental Risk Assessment Terms**

**Aspect** – Elements of the operator’s activities, products, or services that may interact with the environment. These include routine and non-routine activities.

**Source of potential risk** – Where there is potential to cause adverse impact to the environment. All potential sources of risk considering worst case scenario incidents should be provided (e.g. accidents, incidents, emergency response).

**Environmental impact** – Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an activity or event.

**Consequence** – The outcome of an event expressed qualitatively or quantitatively, being a loss, impact, injury, an expressed concern, disadvantage or gain.

**Likelihood** – The probability or frequency of an event occurring.

**Inherent risk** – The risk rating for an event before mitigation measures, controls or risk treatments are applied. The inherent risk rating reflects the worst case scenario, i.e. the worst possible consequences and their likelihood of occurrence in the absence of risk management.

**Hierarchy of controls** – The selection of controls to manage risk, through elimination, substitution, isolation, engineering, administration and Protective Equipment controls. The efficacy of risk reduction diminishes the further down this hierarchy.

**Mitigation measures** – Measures, controls or risk treatments implemented to reduce the likelihood or consequence of an event occurring.

**Residual risk** – The risk rating for an event after mitigation measures, controls or risk treatments are applied. The residual risk rating reflects the expected outcomes if risk management is effective and robust i.e. to reduce the consequences or likelihood of their occurrence.

### 3.3.1 Risk Assessment Methodology

In order to provide clarity on the ERA process undertaken, the EP must contain a description of the risk assessment methodology. This initially involves developing a risk matrix and clear definitions of the consequence and likelihood levels.

All terms and classifications used will need to be defined in the EP. As a guide, an example of a risk matrix is shown in Table 8 and corresponding descriptions of consequence and likelihood levels in Table 6 and Table 7. These are provided for example only.



**Table 6: Example Consequence Definitions**

Level	Reportable Incidents				
	1	2	3	4	5
Environmental Value	Insignificant	Minor	Moderate	Major	Catastrophic
Biodiversity/ Flora/Fauna/ Ecosystem	Alteration or disturbance to an isolated area that is unlikely to affect the habitat, species or ecosystem.	Alteration or disturbance to less than 5% of a habitat, species or ecosystem resulting in a minor, recoverable impact within one year.	Alteration or disturbance to 5-30% of a habitat, species or ecosystem resulting in a moderate, recoverable impact within one to two years.	Alteration or disturbance to 30-70% of a habitat, species or ecosystem resulting in a major, recoverable impact within three to 10 years.	Alteration or disturbance to more than 70% of a habitat, species or ecosystem resulting in extinction or permanent changes, recovery (if possible) greater than 10 years.
Water Resources	Low impact to isolated area with no effect on the use of the water.	Contained low impact with negligible effect on the use of the water.	Uncontained impact that will materially affect the use of the water, but is able to be rectified in the short-term.	Extensive hazardous impact requiring long-term rectification.	Uncontained hazardous impact with long-term residual effect.
Land Degradation	Negligible impact to isolated area.	Contained low impact, no impact on environmental value.	Uncontained impact, able to be rectified in the short-term without causing pollution or contamination.	Extensive hazardous impact requiring long-term rectification.	Uncontained hazardous impact with long-term residual effect.
Air Quality	No detectable impact.	Contained low impact, no impact on environmental value.	Uncontained impact that will materially affect an environmental value, but is able to be rectified in the short-term.	Extensive hazardous impact on an environmental value requiring long-term rectification.	Uncontained hazardous impact with long-term residual effect.

**Table 7: Example Likelihood Definitions**

<b>Level</b>	<b>Descriptor</b>	<b>Expected Frequency</b>	<b>Probability</b>
<b>1</b>	Rare	Once in 15 years.	Highly unlikely, but may occur in exceptional circumstances. It could happen, but most probably never will.
<b>2</b>	Unlikely	At least once in 10 years.	Not expected, but there is a slight possibility it may occur at some time.
<b>3</b>	Possible	At least once in 3 years.	This event might occur at some time as there is a history of casual occurrence of similar issues with past projects/activities internally or externally.
<b>4</b>	Likely	At least once per year.	There is a strong possibility the event will occur as there is a history of frequent occurrence with past projects/activities internally or externally.
<b>5</b>	Almost Certain	More than once per year.	The event is expected to occur at some time as there is a history of continuous occurrence with past projects/activities internally or externally.

Consequence levels should be allocated based on the scale of the activities and the potential impacts on specific environmental values and should take into account the environmental sensitivity of the area in which the activity is taking place.

The likelihood level for a given impact may relate to the known frequency of the event occurring, based on available industry data or a statistical review. Qualifying statements can be used to differentiate likelihood levels (e.g. rare, unlikely, possible, likely, almost certain).

The consequence and likelihood descriptions must account for the nature, scale and environmental sensitivity of the proposed activity location.

Please note, DMP does not regard the application of global corporate risk matrices to activities in WA as being contextually appropriate or relevant.

**Table 8: Example Risk Matrix**

		Consequence				
		1	2	3	4	5
Level	Descriptor	Insignificant	Minor	Moderate	Major	Catastrophic
	Likelihood	1 Rare	Very Low	Very Low	Very Low	Low
2 Unlikely		Very Low	Very Low	Low	Medium	High
3 Possible		Very Low	Low	Medium	High	High
4 Likely		Low	Medium	High	Very High	Very High
5 Almost Certain		Medium	High	High	Very High	Extreme

**3.3.2 Identification of Sources of Risk and their Impacts**

The *HB 203:2012 Managing Environment-related Risk* states: “Comprehensive identification is critical, because a risk not identified at this stage will not be included in further analysis.” Furthermore, if a potential impact and/or source of risk is not identified measures to mitigate these will not be implemented.

Sources of risk and their associated impacts must be identified for both planned activities (routine) and unplanned events (accidents/incidents) of the proposed activity. During the ERA process the source of risk and associated impact should be clearly defined to determine what it is being assessed. In cases where there are multiple sources of risk with different impacts, the operator should risk assess all credible scenarios. For example, an operator should assess the risk of a diesel spill during refuelling activities separately to a diesel spill caused by diesel storage tank failure due to varying environmental impacts and risks, and management controls requiring implementation.

It is common practice to conduct a workshop to identify potential sources of risk and their impacts. This is best undertaken by a multidisciplinary team of personnel who are trained, competent, experienced, have specialist knowledge of the proposal and can make appropriate decisions regarding the implementation of mitigation measures onsite. Additionally, literature reviews should be conducted, and appropriate specialist advice sought to ensure that all potential risks and associated impacts have been adequately identified and the consequence and likelihood levels are appropriately assigned.

The EP should detail the risk assessment process undertaken by the operator. This may include details of workshops conducted (date, title of personnel involved), the risk assessment methodology utilised and the environmental aspects assessed. The ERA is required to be included within the EP or as an appendix. This should be in tabular format and demonstrate that the operator has systematically evaluated all the potential environmental impacts and risks that may arise from the activity, the sources of risk, likelihood of occurrence, potential consequences and mitigation measures to be implemented.

The ERA table should include inherent risk levels (pre-treatment), identify mitigation measures applied to control the risk and residual risk levels (post-treatment). Table 9 provides an example of an ERA table. Please note the example provided does not contain a complete suite of information required for each source of risk.

Risk analysis is not a one off process. Operators must continuously review the potential environmental impacts and risks associated with their activity and demonstrate that all environmental impacts and risks are reduced to ALARP at all times. The ERA will need to be reviewed and updated as part of this process to ensure that information is up-to-date. This forms part of an operator's Environmental Management System.

**Table 9: Basic Example to Demonstrate Multiple Scenarios with Different Risks**

Activity	Aspect	Hazard (Source of Risk)	Potential Impact	Pre Treatment			Mitigation Measures (Controls to Reduce Likelihood & Consequence)	Post Treatment		
				Likelihood	Consequence	Inherent Risk		Likelihood	Consequence	Residual Risk
Facility Operations	Refuelling of equipment	<10L spill of diesel from the refuelling hose on the well pad	Contamination of the soil contained to hardstand area	5	1	Medium	<ul style="list-style-type: none"> <li>Refuelling Procedures are in place including requirements for:               <ul style="list-style-type: none"> <li>all mobile equipment to be refuelled in a bunded refuelling area</li> <li>all immobile refuelling to be undertaken using drip tray</li> <li>constant watch during refuelling</li> <li>dry break couplings used on refuelling hose</li> <li>spill kits available for use and located at strategic locations around the site (including refuelling area)</li> <li>spill kits are stocked and maintained.</li> </ul> </li> <li>Immediate clean-up of all spills.</li> <li>Daily site inspections include inspection of refuelling area, bunding and equipment.</li> </ul>	3	1	Very Low
	Bulk Storage of Hydrocarbons	<10,000L spill of diesel from rupture of storage tank	Contamination of soil offsite and groundwater	3	5	High	<ul style="list-style-type: none"> <li>Double skinned tank.</li> <li>Tank stored within a lined bunded area (5mm HDPE) with 110% capacity of the tank volume.</li> <li>Tank stored &gt;10m from the edge of hardstand and ground surface graded to slope away from edge.</li> </ul>	1	5	Medium

### **3.3.3 Risk Management and Justification of ALARP**

All potential risks identified in the ERA should be described and discussed in detail in the EP to demonstrate the effectiveness of mitigation measures in reducing the risks to ALARP. This can be undertaken for individual risks or for a group of similar risks.

Operators are required to apply a systematic approach to demonstrate ALARP by applying the hierarchy of controls (i.e. elimination, substitution, isolation, engineering, administrative and/or protective equipment controls) to the management of environmental impacts and risks.

The use of industry-standard models in quantifying environmental risks is supported, however, it is the responsibility of the operator to provide any additional information on model verification and validation which may be required. For example, the use of results from toxicity tests, plume modelling, biological surveys and literature reviews may be necessary to support the ERA and demonstrate the acceptability of the ALARP justification.

### **3.3.4 Risk Classification and Reporting Requirements**

A reportable incident is defined in the Regulations as an incident that is classified as a reportable incident under the EP for the activity, or an incident arising from the activity if the incident has caused, or has the potential to cause, an adverse environmental impact, and under the ERA process described in the EP for the activity, that environmental impact is categorised as moderate or more serious than moderate (Section 3.8.3.1).

For the purpose of implementing the legislation in a consistent manner, the operator must define the consequence levels that imply a 'moderate or more serious than moderate' consequence (see Table 6) regardless of the terminology used by the operator to describe consequence categories in the ERA.

### **3.3.5 Presenting Environmental Management Strategies**

Table 10 provides an example of presenting the environmental management information required in an EP (as detailed throughout Sections 3.3, 3.4 and 3.6). It can also be used as an effective onsite tool for managing environmental impacts and risks of an activity. This table provides a useful and logical sequence of information relating to each environmental aspect of the activity and is DMP's recommended template for presenting environmental management information.

**Table 10: Recommended Template for Presenting Environmental Management Strategies Relating to the Environmental Risk Assessment**

<b>Environmental Aspect (e.g. Waste Management)</b>					
Activities	<i>e.g. disposal, transport, storage.</i>				
Hazard	<i>e.g. inappropriate disposal, loss during transport, inappropriate storage.</i>				
<b>Inherent Risk Analysis and Ranking</b>					
Potential Environmental Impact	Consequence	Likelihood		Inherent Risk	
<i>Detail impact e.g. soil contamination</i>	X	Y		X x Y (i.e. High)	
<b>Note: More than one impact can be included (add new rows for each impact).</b>					
<b>Mitigation Measures (Controls to Reduce Likelihood)</b>					
Potential Environmental Impact	Consider the hierarchy of controls: <ul style="list-style-type: none"> <li>• elimination</li> <li>• substitution</li> <li>• isolation</li> <li>• engineering</li> <li>• administration</li> <li>• protective equipment controls</li> </ul>				
<i>Detail impact e.g. soil contamination</i>	<i>e.g. waste stored in lidded receptacles, waste removed by licenced waste contractor.</i>				
<b>Residual Risk Analysis and Ranking</b>					
Potential Environmental Impact	Consequence	Likelihood (of the noted consequence)		Residual risk	
<i>Detail impact e.g. soil contamination</i>	X	Y		X x Y (i.e. Medium)	
<b>Demonstration of ALARP and Acceptability (Consider hierarchy of controls)</b>					
<i>Detail ALARP:</i>					
<i>Detail Acceptability:</i>					
<b>Measurement of Environmental Performance</b>					
Potential Environmental Impact	Objective	Standards	Measurement Criteria	Person(s) responsible	Records
<i>Detail impact e.g. soil contamination</i>	<i>Detail objectives</i>	<i>Detail standards</i>	<i>Detail measurement criteria</i>	<i>Detail who is responsible</i>	<i>Detail what records demonstrate that criteria have been met</i>
<b>Systems and Procedures</b>					
<i>Detail systems and procedures</i>					
<b>Monitoring</b>					
<i>Detail monitoring to be undertaken</i>					
<b>Records</b>					
<b>Note: records can be included here or next to each measurement criteria above.</b>					



## 3.4 Objectives, Standards and Measurement Criteria (Regulation 14(5))

An EP must include environmental performance objectives (objectives), environmental performance standards (standards) and measurement criteria related to all potential environmental impacts and risks associated with the activity (as identified within the ERA). These objectives, standards and measurement criteria must be defined in such a way that the operator's performance in protecting the environment can be measured.

### 3.4.1 Environmental Performance Objectives

Objectives should be clearly defined in terms of preventing, avoiding or minimising environmental impacts and protecting the environment. In some instances it may be appropriate to define more than one objective for each environmental aspect (e.g. water, soil, fire). The objectives should be clearly linked to the relevant environmental impacts and risks as assessed within the ERA.

### 3.4.2 Environmental Performance Standards

Standards include specific requirements in legislation (e.g. a clause or regulation), codes of practice, guidelines, or procedures that are used to manage the environmental impacts and risks of the activity. Standards must be defined so that the operator's performance in protecting the environment can be measured against them. For each objective an EP must include at least one related standard, however, it is common for a number of standards to be included.

### 3.4.3 Measurement Criteria

Auditable and measurable criteria must be identified for each objective and related set of standards. The measurement criteria must be based on relevant standards and enable determination of whether the objectives and standards have been met. Measurement criteria must address the full range of objectives and standards and allow for direct measurement of performance through monitoring, data analysis, inspections or audits. Multiple measurement criteria may be required to determine and demonstrate whether an objective or standard has been met. All measurement criteria should follow the SMART principle as detailed in Table 11.

**Table 11: SMART Principle**

<b>Specific</b> – Targets a specific objective or standard.
<b>Measurable</b> – Quantifies or at least demonstrates an indicator of progress or success.
<b>Achievable</b> – Commits to having adequate resources in place.
<b>Realistic</b> – States what results can realistically be achieved (ALARP).
<b>Time-bound</b> – Specifies when the testing, monitoring, or results will be undertaken or achieved.

Measurement criteria may relate to:

- a certain activity being carried out (e.g. monitoring)
- certain procedures or requirements being followed
- certain equipment being in place
- adequate personnel to carry out tasks
- specific emission and discharge limits not being exceeded
- the keeping of records
- the absence of an undesirable condition (e.g. no incidents).

It should be noted that an incident arising during an activity that causes a breach of an objective or standard constitutes a recordable incident (Section 3.8.3) and must be reported monthly to DMP.

Table 12 provides an example of how to present objectives, standards and measurement criteria within an EP. The example provided does not provide a complete suite of information required for each source of risk.

**Table 12: Example Performance Objectives, Standards and Measurement Criteria**

Source of Risk	Example Objective	Example Standards	Example Measurement Criteria
Noise during seismic acquisition	<ul style="list-style-type: none"> <li>• Minimise acoustic disturbance to marine fauna.</li> </ul>	<ul style="list-style-type: none"> <li>• Shut down power source when fauna are observed within 500m of an acoustic source as per EPBC Act – Policy Statement 2.1</li> <li>• All personnel will complete the environmental induction as detailed in section XY of this EP.</li> </ul>	<ul style="list-style-type: none"> <li>• No recorded incident(s) of air guns not being powered down when fauna sighted within 500m of acoustic source.</li> <li>• Training records verify that all survey personnel have completed company site specific and environmental inductions (including marine fauna component) prior to conducting activities.</li> </ul>
Leak or spill from drilling sump	<ul style="list-style-type: none"> <li>• No loss of containment of drilling fluids.</li> </ul>	<ul style="list-style-type: none"> <li>• Drilling sump lined with 1.5mm HDPE as per DoW – Water quality protection note 26.</li> </ul>	<ul style="list-style-type: none"> <li>• Zero incidences of containment breach/failure recorded in XYZ System.</li> <li>• Weekly inspection checklists confirm that there are no tears in sump lining.</li> </ul>
Inadequate Rehabilitation	<ul style="list-style-type: none"> <li>• Rehabilitation meets completion criteria within three years.</li> </ul>	<ul style="list-style-type: none"> <li>• Vegetation and topsoil segregated and stockpiled in separate windrows &lt;2m high as per section XY of company procedure XYZ.</li> <li>• Access tracks are closed to prevent unauthorised access as per section XY of this EP.</li> </ul>	<ul style="list-style-type: none"> <li>• Post construction audit demonstrates that vegetation and topsoil were stockpiled separately.</li> <li>• Weekly site inspection checklists demonstrate that stockpiles were &lt;2m high.</li> <li>• No recorded incidents of unauthorised access to rehabilitated tracks.</li> <li>• Rehabilitation report to include photographs of access restrictions.</li> </ul>

## 3.5 Legislation and Other Requirements (Regulation 14(6))

An EP must identify all Commonwealth and State legislation, international conventions or agreements, codes of practice, and Australian standards which are relevant to the proposed activity. Conditions imposed under other legislation must also be specified. The EP should provide details of how each is relevant to the activity proposed and outline the specific requirements that may affect the management of the activity.

The operator is responsible for ensuring all relevant legislation and other requirements are identified. It should be noted that the EP approval does not negate the requirement for other regulatory approvals.

### 3.5.1 Legislation

Commonwealth legislation can be accessed via the Commonwealth of Australia Law website [www.comlaw.gov.au](http://www.comlaw.gov.au).

Copies of Western Australian State legislation can be accessed via the State Law Publisher website [www.slp.wa.gov.au](http://www.slp.wa.gov.au).

The operator should continuously monitor legislation and associated requirements for changes/amendments throughout the activity to ensure ongoing compliance.

### 3.5.2 International Conventions and Agreements

Environmental international conventions and agreements can be accessed via the DotE website <http://www.environment.gov.au>.

Examples of other international conventions and agreements that could be considered include:

- The International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)
- The United Nations Convention on the Law of the Sea (UNCLOS)
- The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (BASAL).

### 3.5.3 Australian Standards

Australian standards can be accessed via the Standards Australia website [www.standards.org.au](http://www.standards.org.au).

### 3.5.4 Codes of Practice

The Australian Pipelines and Gas Association (APGA) have developed a code of environmental practice for all pipeline activities which can be accessed via their website [www.apga.org.au](http://www.apga.org.au).

The Australian Petroleum Production and Exploration Association (APPEA) have developed three codes of practice which can be accessed via their website <http://www.appea.com.au>.

- APPEA Code of Environmental Practice
- Seismic Exploration and the Marine Environment
- Operating in Protected Areas.

### 3.5.5 Other Requirements

The EP must detail any other requirements that may be relevant to the proposed activity, including but not limited to:

- **Management Plans:** Lands that have been reserved, declared or otherwise dedicated under the *Land Administration Act 1997*, or any other written law, may have a management plan specifying management requirements for that area. An EP must detail the requirements of any management plans relevant to the location of the proposed activities (ie. within National Parks, Nature Reserves, and specific use areas) and ensure that the activities proposed are consistent with the management requirements specified.
- **Government Requirements:** Guidelines and publications released by government departments and agencies that provide detailed information and guidance on specific environmental issues, areas and factors. These are available on the various government departments and agencies websites, including but not limited to [www.dmp.wa.gov.au](http://www.dmp.wa.gov.au), [www.epa.wa.gov.au](http://www.epa.wa.gov.au), [www.der.wa.gov.au](http://www.der.wa.gov.au), [www.water.wa.gov.au](http://www.water.wa.gov.au), [www.environment.gov.au](http://www.environment.gov.au).

**The EPA Guidance Statement No. 33: *Environmental Guidance for Planning and Development* is a useful reference document for petroleum operators. It also contains (in Part E) additional useful sources of information including other relevant EPA, DPaW, DER and DoW guidance documents and useful publications.**

**These span topics such as baseline monitoring, clearing, use of liners, contaminated sites assessment and remediation, acid sulphate soils, water protection, emissions management and many more. It should be noted that this document is from 2008 so some of the referenced material may have been changed or updated.**

**Where relevant, the most up-to-date guidance should be found on the relevant agencies' websites.**

### 3.5.6 Referrals to other Government Agencies

An EP must consider the above legislation, other requirements and specifically detail any referrals, permits, or licences relevant to the environmental management of the activity. The EP must also detail where a decision has been made by the operator not to refer a proposed activity and justify the reasons for this decision. See Appendix C for further information regarding other agency referrals.

## 3.6 Implementation Strategy (Regulation 15)

The primary objectives of the implementation strategy are to direct, review and manage all aspects of an activity to ensure that all potential environmental impacts and risks are continuously reduced to ALARP. Operators must adopt appropriate technologies, systems, practices, and procedures for the activity that comply with specified objectives, standards and all relevant environmental legislation.

The implementation strategy must include the components outlined in Sections 3.6.1 to 3.6.7.

### 3.6.1 Systems, Practices and Procedures

The EP must:

- include details of the operator's systems, practices, and procedures relating to the management of all potential environmental impacts and risks of the activity
- outline the operator's processes to continuously reduce the potential impacts and risks of the activity to ALARP
- state how these systems, practices and procedures will be used to meet the objectives, standards and measurement criteria specified in the EP.

It is important that systems, practices and procedures are clearly specified in the EP. Where relevant these should be identified through the use of document numbers and titles. Any mitigation measures included in procedures that are relevant to environmental risk minimisation should also be included in the EP.

Internal management of systems, practices and procedures should be detailed in the EP, including periodic review and updates. This is to ensure they are current, relevant and in line with best practice industry standards. DMP encourages operators to adopt an ISO 14001:2004 accredited Environmental Management System (EMS) to establish, implement, maintain and improve environmental management, performance and compliance.

### 3.6.2 Corporate Environmental Policy

An EP must contain a copy of the operator's corporate environmental policy. The policy should be relevant to the activity, be recently signed and dated by a company executive and outline the operator's environmental objectives. The environmental policy should demonstrate that the operator has a corporate culture of sound environmental management, make a high level commitment to minimising environmental impacts and risks to ALARP and encourage continuous improvement initiatives.

### 3.6.3 Roles and Responsibilities of Personnel

The Regulations require that the EP establishes a clear chain of command which sets out the roles and responsibilities of personnel in relation to the implementation, management and review of the EP. This is to ensure that duties, functions, resources and accountability of tasks are assigned to the appropriate personnel.

An EP must describe the roles and responsibilities of all personnel in implementing environmental management. This includes any tasks, systems, practices and procedures identified in the implementation strategy as well as covering all relevant authority levels ranging from the operator's senior management, through to crews, contractors and sub-contractors. The roles and responsibilities specified should relate directly to the implementation, management and review of the commitments within the EP and include:

- the specific tasks, systems, practices and procedures assigned to each person or position
- the authority given to each person or position to implement appropriate environmental management jobs/tasks
- the resources assigned to those roles, appropriate to the responsibilities.

The responsibilities and accountability of personnel should be documented and should be commensurate with authority levels.

### **3.6.4 Training and Competencies**

An EP must demonstrate how an operator proposes to ensure that all personnel associated with the activity are aware of their environmental responsibilities and have the appropriate competencies (eg. licences and tickets) to undertake their role in compliance with the EP.

The EP must, as a minimum, include an overview of the induction and training programs, a summary of their content and detail how these relate to the responsibilities of personnel. Inductions and training should be specific to a person's role and therefore the training and competencies required may differ between personnel. The EP must also outline how the competency of personnel will be assessed, reviewed, tracked and recorded. This should be detailed enough for DMP to be satisfied that key aspects of environmental management will be addressed in the training and induction programs.

The responsibility for managing personnel training and competency should also be included in the roles and responsibilities section of the EP (Section 3.6.3).

### **3.6.5 Monitoring, Auditing, Management of Non Conformance, and Review**

The Regulations require that the implementation strategy provides for the monitoring, audit, management of non-conformance and review of the operator's environmental performance with a view to continuous improvement of the environmental management of the activity.

Monitoring and measuring environmental performance should be appropriate to the activity, with all results systematically recorded. Monitoring and measuring environmental performance can be undertaken by a number of different methods. These may include (but are not be limited to) routine environmental monitoring, analysis of performance objectives, standards and measurement criteria, random checks, agenda items and discussions at daily meetings, regular inspections or audits with the completion of checklists and audit reports.

#### **3.6.5.1 Monitoring**

Environmental monitoring should be conducted in a way that the results can be used to determine compliance with specific objectives, standards and measurement criteria. The EP should detail all environmental monitoring undertaken for the activity based on the potential environmental impacts and risks. Monitoring may include desktop reviews, site inspections and, where relevant, scientific monitoring. All monitoring techniques must be detailed within the EP and include (where relevant):

- monitoring methodology
- frequency of monitoring to be undertaken
- details of any equipment, procedures or checklists to be used
- process for obtaining and collecting samples
- laboratory accreditation i.e. National Association of Testing Authorities (NATA) certified
- process for ensuring accuracy of any monitoring equipment used (e.g. calibration).

The monitoring data must be included in activity reports (Section 3.8.2) with a description of methodology, analysis, review and identification of trends and a summary of results.

Environmental monitoring that may be undertaken includes, but is not limited to:

#### **Routine Site Inspections**

The frequency of routine site environmental inspections should be determined by the proposed activity type, the activity location and the potential environmental impacts and risks of the activity. Site inspections should be undertaken regularly (e.g. daily, weekly) with the frequency of inspections being justified within the EP. Site inspections must be undertaken to ensure that all mitigation measures and implementation strategies in the EP are correctly implemented onsite. The EP should provide detailed information regarding the timing, scope and recording of these inspections.

#### **Groundwater Monitoring**

Baseline monitoring may be undertaken to identify groundwater quality and quantity in the vicinity of the activity location prior to the commencement of activities. Ongoing monitoring can then be undertaken to demonstrate that the environmental objectives are being met. DMP has developed Groundwater Monitoring in the Onshore Petroleum and Geothermal Industry Guidelines to provide operators with guidance for the development of effective groundwater monitoring programs.

#### **Monitoring of Flora and Fauna**

Where there is a potential to impact on flora or fauna species of conservation significance, monitoring may be required to demonstrate that impacts are continuously being managed to ALARP. Examples of monitoring include observations and photo monitoring for the presence of conservation significant fauna species at the activity location.

#### **Monitoring of Emissions and discharges**

The regulations require operators to monitor and report on emissions and discharges from the activity on a quarterly basis. For details refer to section 3.8.4

#### **Other Environmental Monitoring**

The operator must consider whether other environmental monitoring (e.g. noise or air quality) is required based on the actual and potential environmental impacts and risks of the activity. The operator must demonstrate that any impacts and risks are being managed to ALARP and ensure compliance with environmental objectives, standards and measurement criteria.

#### **3.6.5.2 Auditing**

The operator is required to review the effectiveness of the implementation strategy periodically to determine the environmental performance of the activity and identify continuous improvement initiatives.

An EP should outline the arrangements that are in place for the environmental auditing of the activity. This may include desktop or field environmental audits



undertaken internally or by a third-party. The EP must specify the planned frequency or schedule of audits and detail the process and scope of the audits to be undertaken. The level of auditing should be commensurate with the nature and scale of the activity and the receiving environment.

DMP expects that environmental audits will be undertaken at least annually to demonstrate compliance with the objectives, standards and implementation strategy of the EP. Where an activity is undertaken in multiple stages (e.g. drilling a well and production testing), has a higher level of risk, or there are sensitive receptors in the vicinity of the activity, audits should be undertaken on a more regular basis.

Environmental audits should be used to:

- ensure all significant environmental aspects of an activity are covered in the EP
- ensure that mitigation measures implemented onsite are appropriate and reduce environmental impacts and risks to ALARP
- ensure that management strategies are effective in achieving objectives and standards, and that these are implemented, reviewed, and amended where necessary
- identify non-compliance and opportunities for continuous improvement
- ensure that all environmental completion criteria have been met prior to completing, suspending or decommissioning an operation.

Where more than one audit is to be undertaken for a reporting period, the operator may choose to undertake targeted auditing of high risk aspects of the activity or areas where previous non-conformance or issues have been identified. DMP notes that at least one audit must focus on the operator's compliance with their objectives, standards and measurement criteria.

DMP Inspectors appointed under the Petroleum Acts (PGERA, PSLA, PPA) may conduct environmental compliance inspections at any stage of an activity.

#### **3.6.5.3 Management of Non-Conformance**

An EP should outline the arrangements for investigating non-conformance with the objectives, standards, measurement criteria, implementation strategy or mitigation measures within the EP.

Arrangements for the management, tracking, action, and close out of non-conformance should be detailed in the EP, for example the use of a corrective action tracking register. Any corrective or preventative actions taken should be commensurate with the magnitude of the non-conformance identified and be appropriately recorded.

#### **3.6.5.4 Review**

The objective and risk based regulation regime focuses on environmental performance of an activity and aims for continuous improvement. To facilitate this, operators should undertake ongoing and periodic reviews of all aspects of their activities. This is particularly important for longer term or repetitious activities.

The monitoring, auditing and management discussed above plays a large role in reviewing the environmental performance of an activity. To achieve the best environmental outcomes, an operator must not only undertake a performance review but should also identify any trends and variances to determine if any other measures can be effectively implemented to further reduce impacts and risks to ALARP. This should be considered in the EP and the results discussed in annual environmental reports (Section 3.8.1)

### **3.6.6 Record Keeping**

The Regulations require an operator to store and maintain records for a minimum of five years. The operator must make these records available to DMP upon request to demonstrate compliance with the EP.

The EP should identify the types of environmental records that will be maintained for the activity. These should include records that relate to objectives, standards, measurement criteria, mitigation measures, commitments, monitoring, auditing, routine and incident reporting and any additional information relevant to the environmental management of the activity.

The following list is not comprehensive however provides examples of the types of records which may be maintained by the operator:

- induction and training records
- emissions and discharges records (including records of monitoring and test results)
- chemical and hazardous materials manifests
- bunkering records, bilge and ballasting records
- waste disposal receipts
- preventative maintenance system records and work orders
- details of any incidents and associated investigations undertaken
- audit and inspection records (including non-conformances and corrective action tracking)
- any other records that may be used to demonstrate compliance with the implementation strategy of the EP.

A summary of records to be maintained may be displayed as a list in the EP or included in the tables shown in Section 3.3.5 where they can be linked with relevant measurement criteria.

### **3.6.7 Details of Chemicals and Other Substances**

The EP must detail all chemicals and other substances that may be in, or added to, any treatment fluids to be used for the purpose of drilling or hydraulic fracturing or otherwise introduced into a well, reservoir or subsurface formation during the course of the activity.

A number of guidelines are available on the DMP [website](#) to provide operators with further information regarding chemical disclosure requirements:

- *Information Sheet on Chemical Disclosure*
- *Environmental Risk Assessment of Chemicals*
- *Chemical Disclosure Template*.

Details of any chemical, fuel, hazardous material, saline water or any other substance that could potentially have an environmental impact, including large volumes of inert substances, must also be detailed in the EP. This ensures that all potential impacts and risks of the activity, particularly in relation to potential emergency and unplanned events, are appropriately addressed.

### 3.7 Oil Spill Contingency Plan (Regulation 15(10))

The OSCP is an essential component of an EP which is to be incorporated into all relevant operating procedures. An OSCP must include all potential spill scenarios (including worst case) e.g. chemicals, fluids, hazardous materials and hydrocarbons. Spill scenarios must be appropriate to the nature and scale of the activity and the receiving environment.

The OSCP is a project-specific plan outlining the response structure, strategy and associated information necessary to aid in effective response in the event of a spill. The operator must demonstrate that they have the resources, management structure, capacity and capability for the prevention, response, recovery and ongoing monitoring of any spills and impacts.

An OSCP may be incorporated into the implementation strategy of an EP or submitted as a standalone document if appropriate to the nature and scale of the activity. For example, operators may adequately describe the required OSCP information associated with an onshore seismic activity within the EP whereas a standalone OSCP may be more appropriate for activities such as offshore exploration and production. DMP Environmental Officers should be consulted if operators want to submit an OSCP as a standalone document.

The *Guideline for the Development of an Onshore Oil Spill Contingency Plan* is available on the DMP [website](#) and provides detailed guidance for operators regarding the content and structure of an onshore OSCP.

### 3.8 Reporting (Regulations 16, 28, 29 and 30)

An EP must detail all reporting requirements relevant to the activity. These have been summarised in Table 13 and detailed below.

Report templates are available on the DMP [website](#) for the preparation of reportable and recordable incidents and emissions and discharges reporting. All reports and notifications must be submitted to [petroleum.environment@dmp.wa.gov.au](mailto:petroleum.environment@dmp.wa.gov.au).

**Table 13: Routine and incident reporting requirements for activities**

Requirement		Timing
<b>Activity reporting as per regulation 16</b>		
<b>Activity Report (Section 3.8.2)</b>	<p>Regulation 16 requires an operator to report at least annually (or as otherwise specified) and demonstrate whether objectives and standards have been met.</p> <p>Reporting is required for all stages of an activity (i.e. from initial ground disturbance through until rehabilitation has been completed).</p> <p>DMP recommends that reports are submitted within three (3) months of the end of each reporting period.</p>	Agreed frequency and date (at least annually) to be detailed within the EP.
<b>Incident reporting as per regulations 28, 29 and 30</b>		
<b>Reportable (Section 3.8.3.1)</b>	<p>The operator must notify DMP of any unplanned event identified as having a ‘moderate or more serious than moderate’ consequence level as identified during the ERA process (Section 3.3.4 and Table 6).</p> <p><i>E.g. Uncontrolled release or loss of containment, fire, quarantine incident, disturbance to a particular environmental sensitivity etc.</i></p>	Notification as soon as practicable, but within two hours, followed by a detailed written report within three days.
<p><b>*NOTE: An activity must not continue if a significant new or increased environmental impact or risk is identified that is not addressed in the approved EP.</b></p> <p><b>This must be reported to DMP as soon as practicable.</b></p>		
<b>Recordable (Section 3.8.3.2)</b>	<p>Any non-reportable incident arising from the activity that breaches an objective or standard identified in the EP is regarded as a recordable incident.</p> <p><i>E.g. All spills (&lt;80L to water or &lt;500L to other areas), inadequate waste management, unplanned gaseous release (&lt;500m<sup>3</sup>), exceedance of limits or concentrations of specified discharges, death or injury to fauna, unplanned flora disturbance.</i></p>	Monthly in writing on or prior to the 15th day after the end of the month to which it relates.
<b>Monitoring and reporting on emissions and discharges as per regulation 33 of the PP(E)R and regulation 34 of the PGER(E)R and PSL(E)R</b>		
<b>Emissions and Discharges Report (Section 3.8.4)</b>	<p>The operator of an activity must monitor and report to DMP all emissions and discharges to any land, air, marine, seabed, sub-seabed, groundwater, sub-surface or inland waters environment that occur in the course of the activity.</p>	Every three months, within 15 days after the end of the reporting period.

### 3.8.1 Prestart and Cessation Notifications

Operators are to inform DMP of the start date prior to commencement of the activity (first mobilisation to site) and provide notification of the completion date within one week of the activity ceasing (demobilisation from site). Note that ongoing monitoring and maintenance may still continue after this time and ongoing reporting requirements must continue to be met (Section 3.8.2, 3.8.3, 3.8.4).

The operator is to notify DMP of the status of major stages during the activity e.g. for a multiple well drilling EP, notification should be made at the commencement and cessation of each drilling activity.

### 3.8.2 Activity Reporting (Annual Environmental Reports)

The Regulations require that an EP include arrangements for the monitoring and recording of information about the activity that is sufficient to enable DMP to determine whether the objectives and standards (Section 3.4) in the EP have been met and the implementation strategy complied with. Reports must be provided to DMP at least annually. Where native vegetation clearing has been undertaken, annual reporting is required to continue until it can be demonstrated that the completion criteria for rehabilitation have been met.

Reports must contain:

- a detailed summary of the activities undertaken during the reporting period
- details of any clearing and/or rehabilitation undertaken during the reporting period
- a statement of compliance for each objective and standard in the EP including justification based on the measurement criteria
- a summary of audits undertaken, including the findings and corrective actions
- a summary of any incidents that occurred (recordable and reportable) and lessons learned
- a summary of all emissions and discharges, and any trends or anomalies
- details of methodology and results of any biological or environmental monitoring undertaken, and a discussion of any trends or anomalies identified
- details of any new or increased environmental impacts or risks identified during the reporting period
- details of all training and exercises undertaken
- details of all consultation undertaken through the period.

Reports should also consider compliance with all other commitments in the EP (including mitigation measures), for example, detailing the actual number of audits or emergency exercises undertaken during the reporting period.

#### 3.8.2.1 Staged Reporting

Depending on the planned activity the operator may choose to report on the different stages of the activity separately. For example, an operator may specify activity reporting requirements for an onshore drilling activity to include the following:

- *[Operator name] will submit an activity close out report to DMP within three months of completion of the drilling activities.*

- *If the well is suspended, an annual care and maintenance report will be submitted to DMP for each calendar year, within three months of the end of the reporting period.*
- *Once the well is plugged and abandoned and remediation has been completed an annual rehabilitation report will be submitted (for a minimum of three years until the completion criteria as detailed in Section X of this EP are met). This report will be tailored to the relevant remaining objectives and standards in the EP and will be submitted to DMP for each calendar year within three months of the end of the reporting period.*

The methods and timing for activity reporting must be identified in the EP. DMP recommends that reports be submitted within three months of the completion of an activity or end of the reporting period.

*Annual Environmental Report Guidelines* are available on the DMP [website](#) to provide operators with further information regarding activity reporting content requirements.

### **3.8.3 Incident Reporting**

#### **3.8.3.1 Reportable Incidents**

The Regulations define a reportable incident as:

- an incident that is classified as a reportable incident under the EP for the activity
- an incident arising from the activity if:
  - the incident has caused, or has the potential to cause, an adverse environmental impact
  - under the ERA process described in the EP for the activity, that environmental impact is categorised as moderate or more serious than moderate.

Reportable incidents must be clearly identified in the EP within the ERA table (based on the inherent consequence levels (Section 3.3.4 and Table 6)) and listed within the relevant reporting section. This list should also include the requirement to report the identification of any significant new or increased environmental impacts or risks.

It is important that the operator clearly identifies reportable incident triggers to avoid any doubt on what is classified as reportable to DMP e.g. use of quantitative (size or number that can be measured) and/or qualitative (quality or characteristic value that can be observed) descriptors.

The Regulations require the operator to notify DMP of a reportable incident as soon as practicable but not later than two hours after the first occurrence of the incident or after the time that the operator becomes aware of the incident. A written report must be submitted as soon as practicable but no later than three days after the reportable incident was first observed.

The written report(s) must contain detailed information (see Table 14 and regulations 28 and 29) about the incident, the corrective actions implemented and the outcomes of any investigation undertaken.

DMP may require further information regarding the reportable incident depending on the level of environmental impact caused by the incident, the results of the root cause analysis, or the status of the corrective action(s) to be undertaken.

**Table 14: Example of Information to be provided in a written incident report**

#### **General Details**

- facility name, title, site name or location where the incident occurred
- name and business address of the company that manages the activity
- time and date of the incident
- names and contact details of any witnesses
- name, position and telephone number of person(s) submitting the details
- incident details and description
- activity being undertaken at the time of the incident
- estimated quantity, composition and known toxicity of any fluids that escaped
- duration of escape (if relevant)
- details of any environmental impacts
- immediate response actions taken to prevent further environmental impact
- arrangements for internal root cause analysis investigation (note that regulatory investigation may be required and will be evaluated once the report is received)
- corrective actions proposed to prevent recurrence of further or similar incidents.

#### **3.8.3.2 Recordable Incidents**

The Regulations define a recordable incident as an incident arising from the activity that breaches an environmental performance objective or standard in the EP for the activity and is not a reportable incident. A written report must be submitted to DMP as soon as practicable and in any case within 15 days after the end of the month to which it relates. This information allows DMP to track industry performance and monitor trends in incidents.

As a minimum, the following information must be included in a recordable incident report:

- details of the approved EP(s) (exact title and EARS number) and petroleum title(s) covered by this report
- a record of all recordable incidents that occurred during the monthly reporting period (calendar month)
- all material facts and circumstances concerning those recordable incidents that the operator knows or is able, by reasonable search or inquiry, to find out
- details of the Petroleum Title that each incident occurred in



- any action taken to avoid or mitigate any adverse environmental impacts of those recordable incidents
- any action taken, or proposed to be taken, to prevent similar recordable incidents.

In circumstances where no recordable incidents occurred during the month the operator must provide DMP with a statement to that effect (nil incident report).

### **3.8.4 Emissions and Discharges Reports**

The Regulations require the operator of an activity to monitor all emissions and discharges to any land, air, marine, seabed, sub-seabed, groundwater, sub-surface or inland waters environment.

Examples of emissions and discharges may include:

- vehicle and equipment emissions
- flaring and venting emissions
- fugitive emissions
- produced water discharges
- cooling water discharges
- sewage and grey water discharges
- waste (eg. general, recyclable, hazardous).

To satisfy regulatory requirements the EP must detail the following information:

- volumes of emissions and discharges that may occur in the course of the activity (whether during normal operations or otherwise)
- frequency of monitoring (either continuously or at specified intervals)
- monitoring methodology (direct or calculated)
- frequency and details of tests to be conducted on monitoring equipment to assess the performance of the equipment.

Planned emissions and discharges should be considered in the development of objectives, standards and measurement criteria with the goal of minimising emissions and discharges associated with the activity to ALARP.

Unplanned emissions and discharges should be reported to DMP as incidents in accordance with Section 3.8.3.

The operator of an activity must, for each reporting period, submit a written report of emissions and discharges as soon as practicable and in any case within 15 days, after the end of the reporting period. Details of planned reporting periods must be included in the EP. The report must include results of the monitoring undertaken during the reporting period and details of any tests conducted on monitoring equipment.

## 3.9 Consultation (Regulation 17)

The Regulations require that adequate consultation be undertaken between the operator and relevant authorities, interested persons and organisations. Preliminary consultation with all relevant stakeholders (including DMP) should be initiated well in advance of the preparation of an EP and should be ongoing throughout the planning, approval and operational stages. The identification of potential stakeholders must take into consideration the activity type, location, potential impacts and risks (planned activities and unplanned events) and community interests or concerns.

Effective consultation is the key to ensuring ongoing positive relationships between the petroleum industry, stakeholders and the public. It is important to note that the definition of 'environment' in the Regulations includes 'people and communities'.

### 3.9.1 Principles of Stakeholder Engagement

The operator must provide all stakeholders with a reasonable timeframe to review, consider, and respond to the information provided. The period of time provided must be appropriate for the stakeholders being consulted and should be detailed within the EP. For example, a four month consultation period may be required where a reference group meets quarterly or for fishermen who have limited access to correspondence over a fishing season.

The operator must provide stakeholders with sufficient information to allow them to make an informed assessment of the potential consequences of the activity on their functions, interests or activities.

Operators must demonstrate that the following principles (Table 15) have been addressed when formulating and implementing their community and stakeholder engagement strategy. These principles have been adapted from the Ministerial Council on Mineral and Petroleum Resources (MCMPPR) Principles for Engagement with Communities and Stakeholders (2005).

**Table 15: Principles of Stakeholder Engagement**

**Communication** – Communication must be open, accessible, clearly defined, two-way and appropriate.

**Transparency** – The process and outcomes of community and stakeholder engagement should, wherever possible, be made open and transparent, agreed upon and documented.

**Collaboration** – A co-operative and collaborative approach to seek mutually beneficial outcomes is considered key to effective engagement.

**Inclusiveness** – Inclusiveness involves identifying and involving communities and stakeholders early and throughout the process, in an appropriate manner.

**Integrity** – Community and stakeholder engagement should establish and foster mutual trust and respect.

### 3.9.2 Targeted Community and Stakeholder Engagement Strategy

Operators must formulate and implement a targeted community and stakeholder engagement strategy, and provide the engagement summary in the EP.

The strategy for engagement should recognise the nature and scale of the activity and be modified in accordance with changes in activities and the needs of interested stakeholders.

### 3.9.3 Potential Stakeholders

The operator must consider all potential stakeholders including:

- each department or agency of the Commonwealth to which the proposed activities may be relevant
- each department or agency of the State to which the proposed activities may be relevant

*Departments/agencies should be considered based on legislative requirements (i.e. licences or required approvals) as well as general interests or management of particular reserves or aspects (i.e. groundwater protection).*

- any person or organisation whose functions, interests or activities may be affected by the proposed activities, including but not limited to:
  - land holders or users within the vicinity of the proposed activity that may be interested in or impacted by any planned activities or unplanned events
  - shires and councils
  - community reference groups
  - interested environmental groups
  - indigenous communities and/or community bodies
  - other area or resource users (i.e. water bore holders – licensed and unlicensed).

**The persons potentially impacted by proposed activities are to be considered based on worst case potential scenarios i.e. well blowout, groundwater contamination, ignition of a bush fire etc.**

### 3.9.4 Initial Project/Activity Consultation (During Planning)

Initial consultation should be undertaken very early in the planning stage of any activity and may be in the form of a letter drop or email to inform stakeholders of the:

- type of activity being planned
- tentative timeframes of the activity
- contact person or persons for obtaining further information regarding the activity proposed.

### **3.9.5 Project/Activity Consultation (During EP Development)**

This stage of consultation should be used to provide stakeholders with more detailed information regarding the activity proposed and any updates as necessary regarding activity details. Operators should seek comments and feedback from stakeholders and maintain open communication while ensuring that any responses or issues raised are considered, adequately addressed and closed out appropriately.

This stage of consultation must also consider rehabilitation requirements of any land holders, land owners or relevant government departments. Compensation for planned activities and unplanned events that may affect stakeholders should also be considered and appropriate agreements put in place.

The EP must demonstrate that all potential impacts and risks of the activity on the environment, including people and the community, have been identified and reduced to ALARP.

### **3.9.6 Ongoing Consultation (Post Approval)**

Ongoing consultation must be undertaken to ensure that stakeholders are kept up-to-date. This includes providing general updates on activity progress, notification of any changes to the proposal (e.g. methods, timeframes), notification of significant aspects of an activity (e.g. notifying landholders prior to flaring) or any other updates as necessary or as committed to.

Ongoing consultation should also provide an avenue for stakeholders to communicate any concerns, queries or feedback to the operator during the course of the activity and for the operator to respond accordingly.

The EP should identify ongoing communication protocols to be implemented during and after approval. This includes keeping DMP informed of any significant stakeholder concerns or issues, particularly in circumstances where the concern or issue cannot be alleviated or addressed.

All records of ongoing consultation must be recorded and reported to DMP in activity reports (Section 3.8.2).

### **3.9.7 Recording Stakeholder Consultation**

The EP must demonstrate that the titleholder has undertaken adequate consultation and must include a detailed report of the consultation undertaken, including at a minimum:

- date of consultation and timeframe provided for response
- person, department, or organisation consulted (position, branch, company etc.)
- method of consultation (i.e. meeting [minuted], letter, email)
- a summary of the information provided
- details of all questions, comments, or concerns raised by the stakeholder
- any conditions imposed (where appropriate)
- evidence demonstrating that all questions, comments, issues or concerns raised have been adequately addressed to the satisfaction of the party who raised the question, comment, issue or concern
- any additional information or justification for decisions made.

## 4 SUBMISSION AND ASSESSMENT OF AN ENVIRONMENT PLAN

DMP is committed to ongoing improvements to transparency arrangements, particularly in relation to public disclosure of environmental data and information received. In order to improve public availability of information, at the time of submission of an EP the operator will be required to:

1. consent to the use of the EP as the public disclosure document
2. provide a confidential copy of the EP for public disclosure or
3. provide a summary of the EP for public disclosure (Section 4.2).

Operators must ensure they do not include sensitive information about the activity (e.g. coordinates of heritage sites) or identify personnel or stakeholders by name in the document to be publicly disclosed.

### 4.1 Submission (Regulation 9)

DMP recommends that EPs are submitted at least three months prior to the proposed commencement date of the activity and at least six months in advance for larger scale projects and activities within environmentally sensitive areas. Submission of the EP to DMP as early as possible will assist in reducing potential delays.

As DMP has adopted a paperless system, the online Environmental Assessment & Regulatory System (EARS Online) is required to be used for the submission of all new and revised EPs and other regulatory documentation. Operators are requested to follow the prompts and guidance within the EARS Online system to reduce delays in the assessment and approval of their applications.

EARS Online is available through the DMP [website](#) and all users must register to use this system. Registration will require the submission of a form including operator details and the details for an authorising officer. This authorising officer must not be the person applying for access and should be someone occupying a managerial position within the operator's corporate structure.

Operators may choose to provide access to the EARS Online system to contractors or consultants. This is managed by the operator's administrative person who has the ability to add and remove permissions as required.

Access to EARS Online is only available for operators and their authorised personnel. Publicly available information regarding environmental applications can be found on the DMP [website](#).

### 4.2 Public Disclosure Summary (Regulation 11(8))

A public disclosure summary document, as described in Section 4 above, must include the following information:

- contact details of the nominated operator of the activity or nominated liaison person for the activity
- location of the activity including coordinates and locality maps of the activity
- description of the existing environment that may be affected by the activity

- detail of the construction and layout of any facility
- operational details of the activity and proposed timetables
- environmental impacts and environmental risks of the activity
- the implementation strategy included in the EP
- consultation that has been undertaken during the development of the EP and that is to be undertaken in accordance with the implementation strategy
- disclosure of all chemicals and other substances that may be used down hole during the course of the activity.

### 4.3 Assessment Timeframes (Regulation 10)

The Regulations provide a 30 day period for DMP to make a decision about an EP. Within that timeframe DMP may approve, refuse or request modification and resubmission of the EP. If resubmission of the EP is required (where the EP is found not to meet the requirements of the Regulations) assessment of the new revision resets the 30 day timeframe.

All environmental applications are processed in the order in which they are received. DMP will only consider 'fast-tracking' applications in exceptional circumstances, and specifically where it is demonstrated that the approval is required for the following reasons:

- to address an immediate safety risk
- to prevent significant environmental harm from occurring or continuing
- in response to an emergency event
- to address an error made by DMP in issuing a previous approval.

Any requests for prioritisation of applications must be made in writing to the Executive Director of the Environment Division. Inadequate planning will not be considered a valid reason for prioritising an application. For further information please see the Environment Division Policy 'Application of assessment timeframes for environmental approvals' available on the DMP [website](#).

### 4.4 Environment Plan Assessment (Regulation 11)

The assessment of an EP includes a number of steps and often involves interaction with a range of government departments and stakeholders.

Figure 2 provides an overview of the environmental assessment and approval processes for petroleum activities regulated under State legislation and provides guidance on the documentation required as part of that process.

Once an operator has obtained the necessary title instrument they should consult with an Environmental Officer to clarify the environmental requirements for the proposed activity and obtain guidance on other agency involvement.

During the assessment of an EP, DMP will assess the content of the EP against the requirements of the Regulations. DMP may require amendments where it is determined that the EP does not contain sufficient information to complete the assessment or if the EP does not meet the requirements of the regulations.

# Environmental Assessment

Schematic representation of the EP assessment process for petroleum and geothermal activities in Western Australia

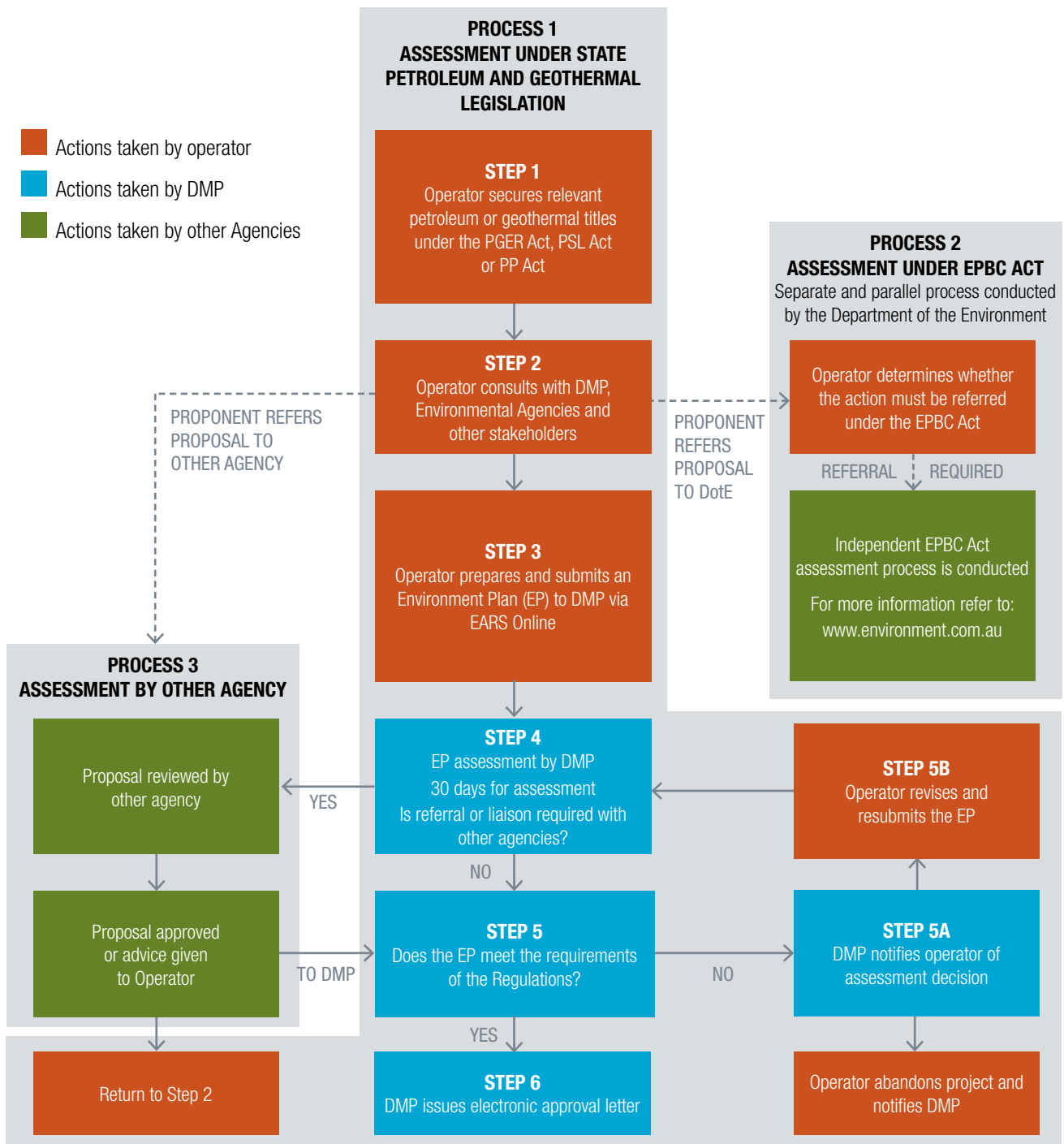


Figure 2: Schematic Representation of the EP Assessment Process



Where requests for amendments have been made on multiple occasions and DMP determines the EP still does not meet the requirements of the Regulations, the EP will be refused in accordance with the DMP *“Procedure for Declining and Refusing Environmental Applications”* available on the DMP [website](#).

Where the proposed impact is deemed unacceptable based on the environmental values present and the likelihood and consequences of the impact, DMP will advise the operator accordingly.

If the EP is deemed to meet all of the requirements of the Regulations DMP will issue approval of the EP via an electronic approval letter.

#### **4.5 Withdrawal of Approval of an Environment Plan (Regulation 25)**

DMP, under delegation of the Minister, may withdraw the approval of the EP for the activity on any of the following grounds:

- non-compliance with a direction given by the Minister
- operator has not complied with regulation 7, 8, 18, 19, 20 or 23
- operator has not complied with imposed conditions
- non-approval of a proposed revision of the EP.

Before withdrawing the approval of an EP, DMP will give the operator at least 30 days written notice of intention to withdraw approval of the EP.

It is an offence to conduct an activity without an approved EP in force.

## APPENDIX A – DEFINITIONS

<b>Activity(s)</b>	<p>Any operations or works carried out in the State under a petroleum or geothermal instrument or any other operations or works carried out in the State relating to petroleum or geothermal exploration or development which may have an environmental impact.</p> <p>Activities include but are not limited to:</p> <ul style="list-style-type: none"> <li>• seismic, geotechnical or other surveys</li> <li>• drilling, well interventions, and hydraulic fracturing</li> <li>• construction, installation, operation or modification of a facility or pipeline</li> <li>• storage, processing or transport of petroleum or geothermal energy</li> <li>• care and maintenance of wells, facilities or pipelines</li> <li>• decommissioning, dismantling or removing of a well, facility or pipeline</li> <li>• rehabilitation.</li> </ul>
<b>Aspect / Environmental Aspect</b>	<p>An element of an organisation’s activities that can interact with the environment.</p>
<b>Environment</b>	<p>The Regulations define environment as:</p> <ol style="list-style-type: none"> <li>a) ecosystems and their constituent parts, including people and communities</li> <li>b) natural and physical resources</li> <li>c) the qualities and characteristics of locations, places and areas</li> <li>d) the heritage value of places,</li> </ol> <p>and includes the social, economic and cultural features of the matters mentioned in paragraphs (a), (b), (c) and (d).</p> <p>Note: this definition must be considered throughout all stages of an activity, in particular, throughout the planning, consultation, risk assessment and rehabilitation stages.</p>
<b>Listed Species</b>	<p>Any species listed under the <i>EPBC Act 1999</i> or <i>Wildlife Conservation Act 1950</i>.</p>
<b>Location / Area</b>	<p>The location or area of an activity for the purposes of the description of the environment should include all areas that may be impacted during planned activities and unplanned events.</p>
<b>Operator</b>	<p>The operator is the person responsible to the instrument holder(s) for the overall management and operations of the activity.</p> <p>The operator is responsible for submitting an EP and gaining approval for the activity.</p>

## APPENDIX B – ABBREVIATIONS

ALARP	As Low as Reasonably Practicable
AS/NZS	Australian /New Zealand Standard
DMP	Department of Mines and Petroleum <sup>1</sup>
DER	Department of Environment Regulation
DotE	Commonwealth Department of the Environment
DPaW	Department of Parks and Wildlife
EP	Environment Plan
EPA	Environmental Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EP Act	<i>Environmental Protection Act 1986</i>
ERA	Environmental Risk Assessment
ESA	Environmentally Sensitive Areas
HDPE	High Density Polyethylene
MARPOL	International Convention for the Prevention of Pollution from Ships 1973 (“MARPOL” is short for Marine Pollution)
OSCP	Oil Spill Contingency Plan
PEC	Protected Ecological Community
PGERA	<i>Petroleum and Geothermal Energy Resources Act 1967</i>
PPA	<i>Petroleum Pipelines Act 1969</i>
PSLA	<i>Petroleum (Submerged Lands) Act 1982</i>
S.M.A.R.T.	Specific, Measurable, Achievable, Relevant, Time-based
TEC	Threatened Ecological Community
The Regulations • PGER(E)R • PP(E)R • PSL(E)R	Collective term for the three sets of Petroleum Regulations listed below: • Petroleum and Geothermal Energy Resources (Environment) Regulations 2012 • Petroleum Pipelines (Environment) Regulations 2012 • Petroleum (Submerged Lands) (Environment) Regulations 2012
WA	Western Australia

<sup>1</sup> The Department of Mines and Petroleum under the delegation, and on behalf, of the Minister for Mines and Petroleum.

## APPENDIX C – REGULATORY CONTEXT (REFERRALS)

This section provides an overview of DMP's regulatory and administrative context relevant to EPs.

### Department of Mines and Petroleum

DMP is the lead regulator and decision-making authority for resource development in Western Australia (WA) under the *Petroleum and Geothermal Energy Resources Act 1967*, *Petroleum Pipelines Act 1969* and *Petroleum (Submerged Lands) Act 1982*. DMP is responsible for the management of these resources to ensure that development occurs in a manner that is safe, environmentally acceptable and achieves community and stakeholder confidence. The associated environment Regulations provide the regulatory framework for onshore and offshore petroleum activities in WA and outline the requirements for an EP.

Clearing undertaken for an EP currently requires a native vegetation clearing permit (NVCP) under Part V of the EP Act unless it meets one of the exemptions listed under this Act. DMP has been delegated to accept, assess and approve NVCP applications relating to petroleum activities in WA.

For further information on the submission and assessment of NVCPs, please see the DMP [website](#).

### Activities on Public Reserves and Other Lands

In some instances consent for petroleum and geothermal energy activities may be required for certain reserved lands and other lands under section 15A of the PGERA (e.g. for activities in a national park, nature reserve and many other reserved lands). Depending on the type of reserve or other land, consent may be required from the Minister for Mines and Petroleum and the Ministers responsible for the affected reserves/lands.

In most circumstances the EP will also provide the basis for consideration of consent for activities on these lands by the relevant Minister.

### Other Agency Advice and Referrals

The assessment and approval process for an EP often requires advice or endorsement from other agencies including but not limited to:

- Environmental Protection Authority (Part IV of the Environmental Protection Act 1986)
- Department of Environment Regulation (administering Part V of the *Environmental Protection Act 1986* (EP Act) and the *Contaminated Sites Act 2003*)
- Department of Parks and Wildlife (administering the *Wildlife Conservation Act 1950* and the *Conservation and Land Management Act 1984*)
- Department of Water (administering the *Rights in Water and Irrigation Act 1914*, *Metropolitan Water Supply Sewerage and Drainage Act (1909)*, *Country Areas Water Supply Act 1947*, *Waterways Conservation Act 1976*, *Water Agencies Powers Act 1984* and *Water Services Act 2012*)
- Department of Transport (DoT) responsible for maintenance and implementation of the Westplan Marine Oil Pollution
- Department of Health (DoH) available for advice related to public health
- Radiological Council (administering the *Radiation Safety Act 1975*)
- Commonwealth Department of the Environment (Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)).

Advice or endorsement from other agencies will be sought on a case-by-case basis and/or in accordance with relevant inter-departmental agreements (Memorandums of Understanding (MoU)). Further details are provided below.

Where possible, DMP will assess an EP in parallel with other environmental assessments or approvals. Further information on when parallel processing is possible can be found in the policy titled 'Parallel processing of environmental approvals' available on DMP's website.

## Environmental Protection Authority

The Environmental Protection Authority (EPA) is a statutory authority established pursuant to the EP Act. One of its functions is to conduct Environmental Impact Assessments (EIA) of significant proposals in WA in accordance with Part IV of this Act. Operators should refer a proposal direct to the EPA where triggers are met. Where an EP appears to be a significant proposal, under Part IV of the EP Act, DMP is required to formally refer the EP to the EPA. The EPA will then make a decision as to whether the proposal requires a formal EIA.

The referral process is administered under the DMP-EPA MoU. There are a number of triggers outlined in the MoU that require DMP to either liaise with the Office of the Environmental Protection Authority (OEPA) or refer activities to the EPA in accordance with section 38(5) of the EP Act. A copy of the MoU can be found on the DMP [website](#) and operators are encouraged to liaise with the OEPA early during the planning phase of all projects to determine if referral is required.

It is recommended that operators refer a proposal direct to the EPA where a trigger for referral under the DMP-EPA MoU is identified. Operators should consult with the EPA prior to referring the proposal. Further guidance is available on the EPA [website](#).

DMP assessment can run in parallel to the Environmental Protection Act process, however, DMP will be constrained from making a decision on the proposal until the Minister for the Environment has made a decision under Part IV of the EP Act. For further information refer to the Parallel Processing of Environmental Approvals guidance on the DMP [website](#).


## Department of Water

The Department of Water (DoW) is the key regulator of water resources in WA. Referrals to the DoW are governed by the Administrative Agreement between DMP and DoW. This agreement is available on the DMP website. In situations where the Administrative Agreement will require DMP to seek advice from DoW, operators are encouraged to engage with DoW prior to the submission of the proposal. This is likely to reduce the need for further information to be provided in the EP assessment phase and therefore result in a timely review.

Specific water related approvals (i.e. bed and banks permits or a licence to take water) may also be required from DoW and where relevant are to be detailed within the EP.

## Department of Parks and Wildlife

The Department of Parks and Wildlife (DPaW) is responsible for administering the *Wildlife Conservation Act 1950* and the *Conservation and Land Management Act 1984* (CALM Act).



Prior to submitting an EP in a Reserve or State Forest managed under the CALM Act, applicants should liaise with DPaW about the proposed activities, noting that the Minister responsible for the Reserve (Minister for Environment) will ultimately consider the proposed activity via the section 15A consent process.

DPaW is also responsible for protection of flora and fauna including protected flora and fauna under the *Wildlife Conservation Act 1950*. In some circumstances, such as where the EP poses risks to rare or threatened fauna, flora or other ecosystem values (such as TEC's or PEC's), DMP reserves the right to seek advice from DPaW. In these circumstances DPaW is asked to provide this advice within 20 business days.

Operators are always encouraged to engage with DPaW if the proposal affects land that is managed by the department under the CALM Act, or if the operator considers there to be significant conservation issues associated with their EP. If suitable evidence of engagement is provided with the EP, referral to DPaW by DMP may not be required.

### **Department of Environment Regulation**

The Department of Environment Regulation (DER) administers works approvals and licences (or registration) required for the construction and operation of all prescribed premises under Part V of the EP Act. There are a number of prescribed premises described in the Environmental Protection Regulations 1987 that relate to petroleum activities. Operators are encouraged to liaise with the DER early in the planning stages of projects where a works approval may be required. For further information see the DER website [www.der.wa.gov.au](http://www.der.wa.gov.au).

Generally, the assessment of an EP and works approvals or licences can occur in parallel and DMP is not required to delay the progression of an EP.

### **Department of State Development**

The Department of State Development (DSD) administers State Agreement Act projects. Operators with relevant state agreements should consult with DSD prior to submitting an EP.

### **Department of Transport**

The Department of Transport (DoT) is the hazard management agency for WA marine pollution response. DMP reserves the right to seek advice from DoT for all offshore or nearshore OSCP's to ensure that the implementation is consistent with the WESTPLAN Marine Oil Pollution Plan. In these circumstances, DoT is asked to provide this advice within 20 business days to meet the DMP regulatory timeframes.

### **Department of Health**

The Department of Health (WA Health) is responsible for public health in WA and may be consulted for advice where an activity has the potential to interact with or impact on the public health system.

## Radiological Council

The Radiological Council regulates Naturally Occurring Radioactive Material (NORM) and all prescribed radiation sources in Western Australia (onshore and state waters) and prescribed radiation sources in the Commonwealth adjacent area. Under the Memorandum of Understanding between the Department of Industry and Resources and the Radiological Council (2005) (MoU), if NORM associated with a petroleum activity is discovered in WA, DMP will advise the Radiological Council. DMP will also advise the petroleum operator of the need to apply for registration with the Radiological Council.

## Commonwealth Department of the Environment

The EP assessment and approval process is undertaken independent of any assessments by the Commonwealth Department of the Environment (DotE) under the EPBC Act. Operators with activities that have the potential to impact on any Matters of National Environmental Significance should liaise with DotE during the development phase to determine if referral is required. DotE has a range of [databases and applications](#) that may be useful to initiate this process.

To reduce duplication in State and Commonwealth regulation, bilateral agreements between the Commonwealth Government and WA for accreditation of certain State environmental assessment and approval processes have been, and continue to be, negotiated. See the DotE website [www.environment.gov.au](http://www.environment.gov.au) for more information.





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