



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



Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2015

Responses to External Stakeholder Comments on Regulations and Guidelines

Introduction

In February 2014, the first of a set of two Resource Management and Administration Regulations for petroleum and geothermal activities was released by the Department of Mines and Petroleum for stakeholder comment along with supporting explanatory notes and guidelines. The draft Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2015, which cover the WA onshore petroleum sector, was open for a three and a half month comment period with the closing date for submissions of 30 May 2014.

This response paper documents the issues raised in the submissions on these Regulations and outlines DMP's responses.

The second part of this set of regulations, the Petroleum (Submerged Lands) Resource Management and Administration) Regulations 2014, which cover submerged lands adjacent to the coast of WA has been drafted based on the final draft of the onshore regulations and it is intended that the two sets of Regulations will come into effect on 1 July 2015.

Purpose

The Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2015 will provide a risk-based management regime for the orderly exploration for and production of petroleum and geothermal energy resources.

A range of resource management and administration matters will be covered by the regulations, including well management plans for the approval of all drilling activities (including shale and tight gas), notification and reporting of discovery of petroleum and geothermal energy resources; field management plans and approval of petroleum and geothermal energy recovery.

The regulations ensure that adequate data and reports will be provided about all aspects of exploration, discovery, development and production activities in relation to petroleum and geothermal energy resources and stipulate the confidentiality periods applicable to the technical data submitted by title holders. This information ensures that petroleum and geothermal energy resources activities are carried out in a proper manner and, in relation to the exploration or recovery of petroleum, in accordance with good oilfield practice.

The regulations also require that operations are conducted to achieve optimum long-term recovery of petroleum and geothermal energy resources to support the safe and efficient management of the resources and assist with optimising the long-term benefits to the Western Australian community but carried out in a way that reduces the risk of aquifer contamination.

Background

State resource management regulations are required to be drafted to follow the equivalent Commonwealth's Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011 which commenced on 28 April 2011. The State regulations will also include geothermal resource management provisions consistent with the scope of activities covered by the Petroleum and Geothermal Energy Resources Act 1967.

Titleholders are currently required to comply with resource management and well integrity conditions for petroleum and geothermal activities by way of Schedules of Exploration and Production Requirements issued on the grant of a title. It is, however, preferable that these requirements be prescribed in regulations in order to provide consistency, transparency and enable enforceability.

The current Schedules, which are intended to be revoked on commencement of the Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2014, are:

- Schedule of Onshore Petroleum Exploration and Production Requirements 1991; and
- Schedule of Geothermal Exploration and Production Requirements 2009.

The Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2015 will form the third and final part of the suite of onshore regulations that commenced in 2010 with the introduction of two onshore safety regulations – Petroleum and Geothermal Energy Resources (Occupational Safety and Health) Regulations 2010 and the Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2010 and was followed in 2012 by onshore environment regulations in 2012 – Petroleum and Geothermal Energy Resources (Environment) Regulations 2012.

Act	<i>Petroleum and Geothermal Energy Resources Act 1967</i>		
Regulations	Resource Management	Environment	Safety
	Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2015	Petroleum and Geothermal Energy Resources (Environment) Regulations 2012.	Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2010
			Petroleum and Geothermal Energy Resources (Occupational Safety and Health) Regulations 2010

Overview of responses

There were 405 submissions received in response to the exposure draft. The general categories of respondents are as follows:

- | | | | |
|---|----|---------------------------|-----|
| • State Government agency _____ | 10 | • State MP _____ | 2 |
| • Petroleum/mining industry representative body _____ | 2 | • Petroleum company _____ | 3 |
| • Environment/Conservation Groups _____ | 4 | • Individuals _____ | 384 |

Of the 384 individual responses received, 370 were directly as a result of an email campaign initiated by the Conservation Council of WA titled “No free pass for gas fracking”.

Respondents were specifically asked to comment on the exposure draft of the Regulations and the supporting Guidelines. Specific comments received on:

- the draft Regulations and DMP's response to these comments are at pages 6 to 64; and
- the Guidelines and DMP's response to these are at pages 65 to 69.

General comments received on both the Regulations and Guidelines and DMP's response to these comments are at pages 70 to 102.

Comments received from respondents that did not directly relate to the Regulations or Guidelines were also included. These comments are in the following categories:

- Environment and Water Protection
- Land Access
- Independent review
- Act deficiency
- Air Quality Protection
- Petroleum Pool References
- Public Health
- Liability
- Appeal Provisions
- Ineffective Regulation
- DMP Resources

DMP's response to these is at pages 103 to 118.

COMMON ACRONYMS

ALARP	As Low As Reasonably Possible
DMP	Department of Mines and Petroleum
EP	Environment Plan
FMP	Field Management Plan.
OPGGG(RMA) Regs	Offshore Petroleum and Greenhouse Gas (Resource Management and Administration) Regulations 2011
PGERA67	<i>Petroleum and Geothermal Energy Resources Act 1967</i>
PGER(Env) Regs	Petroleum and Geothermal Energy Resources (Environment) Regulations 2012
PGER(MoS) Regs	Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2010
PGER(RMA) Regs	Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2014
PSL(RMA) Regs	Petroleum (Submerged Lands) (Resource Management and Administration) Regulations
WMP	Well Management Plan

Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2014

PART 1 – PRELIMINARY

No.	Regulation 1 – Citation	DMP Response
	No comments received	N/A

Amendments made since consultation draft

Regulation 1 amended to change the year of the PGER(RMA) Regs from 2014 to 2015.

No.	Regulation 2 – Commencement	DMP Response
1	To assist in ensuring compliance for continuing operations and planning [petroleum company's] exploration and appraisal activities proposed for 2014, it would be beneficial to receive an indication of the proposed commencement date for the draft regulations once they have been finalised. We look forward to receiving further information about the draft regulations from the Department.	Comment noted. DMP was mindful of the need to provide information on the commencement and implementation of the PGER(RMA) Regs prior to their commencement.

Amendments made since consultation draft

Regulation 2(b) added to provide for Part 9 to commence on the day after the day on which the proclamation of the release of information in the PGERA67 is published in the Government Gazette.

No.	Regulation 3 – Object of regulations	DMP Response
2	3(a) The intermediate evaluation/appraisal/proof of concept stage should be included in addition to the exploration and production/recovery stage. This intermediate stage is referred to in published DMP documents including <i>Natural Gas from Shale and Tight Rocks, An overview of Western Australia's regulatory framework</i> , and the fact sheet on water use and management. Note that different terms for stages have been used in different documents, hence the use of these terms here.	<p>In terms of the PGERA 67 as currently written, exploration is taken to include evaluation/appraisal. It is acknowledged, however, that in regard to how shale and tight gas is extracted, there could be an extended evaluation/appraisal/proof of concept stages as outlined in the extract from the DMP paper "<i>Natural Gas from Shale and Tight Gas, An Overview of Western Australia's regulatory framework</i>" below:</p> <p><i>"There are normally three stages of well development – exploration, evaluation and production. Hydraulic fracturing may be required at any stage.</i></p> <p><i>During the exploration stage, potential resources are identified using a wide range of geological techniques including seismic surveys. Vertical exploration wells are then generally drilled to test the target rock formation for petroleum products. Hydraulic fracturing of an exploration well may occur during this stage to determine if further evaluation is warranted.</i></p> <p><i>In the evaluation stage, multiple vertical and/or horizontal wells are drilled and undergo hydraulic fracturing to determine the physical extent of reserves and likely production rate of a newly discovered gas field. If the evaluation is successful, pipeline access and processing options are then investigated prior to commercial production.</i></p>

No.	Regulation 3 – Object of regulations	DMP Response
		<p><i>During the production stage, horizontal wells are developed by hydraulic fracturing to optimise production, while further evaluation wells are being drilled and tested.</i></p> <p>As the PGER(RMA) Regs are to cover both conventional and unconventional petroleum, it is not considered necessary to separate beyond exploration and production.</p> <p>In addition, the PGER(RMA) Regs have been drafted using the “Object of Regulations” clause from the Commonwealth OPGGS(RMA) Regs as the model to ensure a consistent approach and application in the regulation of resource management, well integrity and data management for the petroleum and geothermal industries across Australian jurisdictions.</p>
3	<p>It is [State Government agency’s] preference that the objects of the regulations more explicitly address the protection of water resources and water users from potential adverse impacts of petroleum and geothermal activities.</p>	<p>While the emphasis in the drafting of the PGER(RMA) Regs is ensure a consistent approach and application in the regulation of resource management, well integrity and data management for the petroleum and geothermal industries across Australian jurisdictions, the objects in regulation 4 have been amended to provide for a reduced risk of aquifer contamination.</p> <p>Protection of onshore water resources and water users, however, is primarily covered by the PGER(Env) Regs 2012.</p>
4	<p>3(a)(i) Consider deleting “in the case of operations relating to the exploration for or recovery of petroleum” as this should apply to all stages of all petroleum and geothermal activities. Consider adding – “and do not pose unacceptable risks to water resources, the environment or water users.”</p>	<p>While the scope of the objects of these regulations as WMPs and FMPs is to address the whole lifecycle of either a well or field, the objects in regulation 4 have been amended to provide for a reduced risk of aquifer contamination.</p> <p>Risks to water resources, the environment or water users are primarily addressed in an EP as required under the PGER(Env) Regs 2012.</p>
5	<p>“Good oil-field practice” is used rather than the term “best practice” which is used by DMP’s guidance on mining uranium.</p>	<p>Good oilfield practice is a key tenet of both the State and Commonwealth petroleum legislation and is defined in both the PGERA67 (section 5) and the <i>Commonwealth Offshore Petroleum and Greenhouse Gas Storage Act 2006</i> (section 7). It is, therefore, the appropriate term to use in the PGER(RMA) Regs.</p>
6	<p>There is a risk that without adequate definition of good practice in the Regulations, the industry’s lowest standard will be the accepted regulatory standard. This may allow for legal challenge and compensation to be sought if the regulator demands higher standards than described as acceptable in the legislation and there is an expectation from the operators that previously acceptable standards have precedence over the newer, higher standards of the time. Regulations that include adequate definition and explanation on how to incorporate best practice will also assist the regulators to ensure that best practice standards are actually employed.</p> <p>Regardless of the resource being exploited, [State Government agency] recommends adoption of an expectation for international best practice through explicit regulation, emphasised by corresponding explanatory guidelines. Transparent regulations are explicit regulations.</p>	<p>The PGERA67 defines the term “good oilfield practice” as “<i>means all those things that are generally accepted as good and safe in the carrying on of exploration for petroleum, or in the operations for the recovery of petroleum, as the case may be;</i>”.</p> <p>This definition is appropriate with the move away from prescriptive regulation to objective-based regulation thereby placing the onus on petroleum and geothermal titleholders to identify risks and effects, establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use.</p>

No.	Regulation 3 – Object of regulations	DMP Response
7	Prescription is not necessarily required as long as there is some reference to ongoing review and implementation of best practice standards of the time. This is particularly relevant for new projects to ensure current, best practice standards will be attempted and achieved. Suggestion: define “proper” and “workmanlike manner” as these terms are open to interpretation to the lowest common denominator.	“Proper and workmanlike manner” is a term used in section 91 of the PGERA67 to describe how holders of petroleum and geothermal permits, drilling reservations, leases and licences are to conduct their work practices.
8	“Encouraging adequate collection of data” and “outline criteria for acceptable data collection and adequacy” is weak language for legislation. It suggests that acceptance of the regulation by the industry is voluntary and contradicts the function of regulation. If adequate collection of adequate data is necessary, stronger language is necessary in the introduction. Criteria for what is adequate and necessary can then be outlined in a Code of Practice or referenced standards that may continually be updated. Suggestion: delete “encouraging”	<p>The PGER(RMA) Regs were drafted using the Commonwealth OPGGS(RMA) Regulations as the model. In regard to regulation 3, it was considered important to align the object of the regulations closely to the Commonwealth to ensure a consistent approach and application in the regulation of resource management, well integrity and data management for the petroleum and geothermal industries across Australian jurisdictions.</p> <p>DMP believes that there is no “weakness” in the data management provisions in these Regulations. Part 8 prescribes what data is required to be submitted and when it is required and imposes penalty provisions for non-compliance. Part 9 clearly lists the information that can be released.</p> <p>The data release regulations are also under-pinned by Part IVA of the PGERA67 which will come into effect when the PGERA(RMA) Regs commence. DMP is moving to broaden the information that can be released under the PGERA 67. It is anticipated that these amendments will be progressed in 2015.</p>

Amendments made since consultation draft

New sub-regulation (iii) added to 3(a) to add an additional object for the PGER(RMA) Regs to reduce the risk of aquifer contamination.

No.	Regulation 4 – Terms used	DMP Response
9	<ul style="list-style-type: none"> <i>Integrity</i> – In (b), consider adding “without any flow into surrounding formations/aquifers” (i.e. casing and cement grouting is intact and seals well from surrounding formations/aquifers). 	The definition of “integrity” is appropriate in terms of the context and objects of the Regulations.
10	<ul style="list-style-type: none"> <i>Well integrity hazard</i> – clarification is needed on what is meant by a ‘well reservoir’? 	The definition of “well integrity hazard” has been amended to replace “well reservoir” with “an underground formation that contains petroleum or geothermal energy resources.”
11	<ul style="list-style-type: none"> <i>Produced formation material</i> – clarity is sought whether this term is consistent with other DMP Acts and regulations? Clarity is needed to ensure that this material/fluid is from geological formations, not introduced by injection. 	“Produced formation material” is the current term used to recognise that both natural fluid and natural non-fluid items are produced from a well. This term is not used in any other DMP Act but “produced formation water” is the term used in the PGER(Env) Regs. This will be a change to be considered in the next amendment to the PGER(Env) Regs.
12	<ul style="list-style-type: none"> <i>Treatment material</i> – clarification is sought as to whether there is any difference between stimulation fluid and fracturing fluid? Is there a need to define drilling fluid, drilling mud, stimulation fluid and fracturing fluid in terms? Should fracturing fluid be “hydraulic fracturing fluid”? 	Drilling fluid, drilling mud, stimulation fluid and fracturing fluid are listed in the Regulations as types of treatment material that can be introduced into a well. For the purposes of these Regulations, it is not considered necessary to further define these terms.

No.	Regulation 4 – Terms used	DMP Response
13	<i>Well activity</i> – should – “including drilling a well” be added?	The Guidelines provided for the stakeholder consultation detail of the type of activities carried out during the life of a well that constitute a “well activity”. Drilling is listed as a relevant activity.
14	Consider adding ‘spud date.’	Spud date” is a well-known industry term to describe the commencement of drilling a well. For the purposes of these Regulations, it is not considered necessary to define this term.
15	The terms ‘decommissioning’ and ‘abandonment’ are used in the regulations and should be defined. The [State Government agency] prefers to use the term ‘decommissioning’ in relation to wells.	Since the release of the consultation draft, DMP has decided that the term “decommission” will be used instead of “abandon”.
16	<p>If DMP is to use the term “drilling activity”, then the defined term “drilling operation” should be changed uniformly throughout the document to “drilling activity”. The concept of drilling being an activity is consistent with the well management plan and activity concepts as applied throughout the document. However, [Petroleum/mining industry representative body] notes that the UK safety case regime uses the terminology “well operation” to mean:</p> <ol style="list-style-type: none"> a. the drilling of a well, including the recommencement of drilling after a well has been completed, suspended or abandoned by plugging at the sea-bed; and b. any operation in relation to a well during which there may be an accidental release of any fluids from that well which could give risk to the risk of a major accident. <p>[Petroleum/mining industry representative body] recommends DMP consider using the terminology of “well operations” consistently, or, where “drilling activity” is seen as a more appropriate term, ensure that this is used consistently throughout the regulations. This should also be reflected in Schedule 1, Item15</p>	The term “drilling operation” has been deleted and replaced with “drilling activity” as this is a better description where the term is used in regulations 73(2)(a); 80(1)(a); and Schedule 1 item 15 and 15(l), (m) and (n).
17	A ‘well integrity hazard’ could potentially result in impacts to the environment, but equally impacts to the environment may not be the direct result of well integrity issues. [Petroleum/mining industry representative body] suggests ‘well integrity hazard (b)’ be removed and re-termed as ‘reservoir or environmental hazard’.	The primary focus on of Part 3 of the PGER (RMA) Regs2014 is to ensure well activities relating to exploration for and recovery of petroleum or geothermal energy resources are managed in a proper and workmanlike manner, in accordance with good oilfield practice and for optimum long- term recovery. “Well integrity hazard” is a key feature of the Regulations and has been adopted from the Commonwealth OPGGS(RMA) Regs. Management of environmental risks and hazards for onshore petroleum and geothermal energy resources is required under the PGER(Env) Regs.
18	Reg 4(c): “integrity” – use of terms “as low as reasonably possible” is entirely insufficient. Require clear provision and measurable results and sufficient provision for this to be monitored.	<p>The PGER (RMA) Regulations require the submission of a WMP which:</p> <ul style="list-style-type: none"> • is appropriate for the nature and scale of the activity or proposed use; • demonstrates that the drilling impacts and risks of the activity will be ALARP; • provides for appropriate well management performance objectives, standards and measurement criteria; and • complies with the Act, the relevant Petroleum (RMA) Regulations and applicable State statutes. <p>The phrase “as low as reasonably practicable” means that the titleholder has to show, through reasoned and supported arguments, that there are no other practical measures that could reasonably be taken to reduce risks further.</p>

No.	Regulation 4 – Terms used	DMP Response
		<p>The concept of ‘reasonably practicable’ is central to a risk-based regime as it allows operators to set goals for their own performance rather than following prescriptive requirements. It also allows DMP to accept or reject the operator’s arrangements under the WMP.</p> <p>Deciding whether a risk is ALARP can be challenging because it requires operators and regulators to exercise judgement. In the great majority of cases, the regulator can decide by referring to existing ‘good practice’ that has been established by a process of discussion with stakeholders to achieve a consensus about what is ALARP.</p>
19	<p><i>“integrity, for a well, means that the well bore — (a) is under control, in accordance with an approved well management plan; and (b) is able to contain reservoir fluid; and (c) is subject only to risks that have been reduced to a level that is as low as reasonably practicable;.”</i></p> <p><i>“Reasonably practicable”</i> is not measurable. Measurable results and sufficient provision for these to be monitored and regulated is essential.</p>	Refer to response for comment 18.
20	<p>According to ISO 31000 Risk Management, risk is defined as “the effect of uncertainty on objective”. The definition of Risk has been updated by current international standards. For this regulation to be considered international best practice it is recommended that it should adopt the most current definition of risk from the ISO Standard for Risk Management.</p>	<p>Following further consideration, the term “risk” has been deleted from the PGER(RMA) Regs. “Risk” is used in a number of different ways in the regulations and rather than come up with a definition that fits all contexts, it was decided to use the common dictionary definition. The supporting Guidelines will be amended to emphasise the need for risk assessment and management to be conducted using international best practice such as ISO Standards.</p>

Amendments made since consultation draft

The terms used in Regulation 4 have been amended as follows:

- “approved field development plan” has been changed to “approved field management plan”.
- “drilling operation” has been changed to “drilling activity”.
- the definition of the term “field” has been amended to delete “field development plan” and insert “field management plan”. This is to more accurately describe that petroleum recovery regulations cover the whole-of-life management of the field and the rather than just development of the field. It is also in keeping with the approach taken for well management.
- a definition of the term “requirement” has been added.
- a definition of the term “underground formation” has been added.
- the definition of the term “well integrity hazard” has been amended to delete “well reservoir” and insert “underground formation”.

PART 2 – SURVEYS

No.	Regulation 5 – Requirement for approval of survey	DMP Response
	No comments received	N/A

No change to Regulation 5 since consultation draft.

No.	Regulation 6 – Application for approval of survey	DMP Response
	No comments received	N/A

Amendments made since consultation draft

Regulation 6 has been amended to include the following new information to be included with the application.

- the instrument number(if available)
- the proposed name of the survey
- the proposed distance or area to be covered by the survey
- details of anything the instrument holder is aware of that is likely to prevent the instrument holder from complying with the requirements of regulation 76(2)(b) in relation to the survey.

No.	Regulation 7 – Time for making application	DMP Response
21	Time frame is too short. Throughout the regulations, time frames are too short. The Minister's capacity to thoroughly assess each project, proposal, management plan and any variations to plans will only become more and more stretched as the industry expands. More time is needed to be sure the Minister has sufficient time to consider all potential impacts. 30 days are commonly allocated throughout the regulations; this must be extended to at least 60 days. More staff should also be allocated to the Minister's should this industry be able to expand.	The timeframes listed in this regulation are the same as those currently used for the lodgement of applications for surveys under the <i>Schedule of Onshore Exploration and Production Requirements 1991</i> . Based on the experience of approving surveys under the Schedule, there is no evidence to support the assertion that the stipulated timeframes are too short to enable a full assessment of a survey application.
22	Time periods generally (for purposes of protection) appear extremely short and unreasonable.	Refer to response for comment 21.

No change to Regulation 7 since consultation draft.

No.	Regulation 8 – Minister may request more information	DMP Response
	No comments received	N/A

No change to Regulation 8 since consultation draft.

No.	Regulation 9 – Decision on application	DMP Response
23	Reg 9: 3 – what happens if not approved? Sufficiently captured in later provisions?	If an application for a survey is not approved, written notice is required to be provided to the instrument holder in sub-regulation (3) along with the reasons for the decision. The survey would therefore not be able to commence. If the instrument holder wishes to proceed with the survey, a new application would need to be submitted and it would be expected that this would take into account the reasons provided for the rejection of the initial application.

Amendments made since consultation draft

Regulation 9 amended to:

- delete "refuse" and insert "reject".
- clarify the information to be provided by the Minister in the written notice of the decision. This includes deleting "the terms of decision" previously in (a).
- clarify the date when the takes effect.

PART 3 – MANAGEMENT OF WELL ACTIVITIES

No.	Management of Well Activities	DMP Response
24	<p>[Petroleum/mining industry representative body] supports the proposed transition to the use of a Well Management Plan (where previously DMP required a Well Operations Management Plan) which reflects the focus on design, construction and integrity for the lifecycle of a well including through to abandonment. The principles underpinning a WMP and reduction of risks to ALARP will be broader than for a single activity (e.g. drilling). These are likely to reflect a company's approach to management of operations in line with ALARP risk principles. Each activity is then proposed in line with the overarching principles of ALARP adopted by the company. These are therefore likely to be common across multiple permits and DMP should clarify whether a WMP can be applied to multiple permits (with activity specific supplementary information also provided by the operator that reflects the nature and scale of a proposed activity).</p>	<p>Comments noted.</p> <p>The ability to have one WMP for multiple permits held by the title holder in the same resource area is recognised as a pragmatic approach to reducing the regulatory burden on the petroleum industry.</p>
No.	Subdivision 1 – Requirement relating to approved well management plan	DMP Response
25	<p>Part 3 – Management of Well Activities – Division 1 Well Management Plan (WMP): Subdivision 1 Requirements relating to approved WMP – Regarding the exception for undertaking well activities in the title area that are not part of the WMP in case of emergency, what penalties and measures are enforceable if the Minister deems the activity to not have been an emergency, and if the emergency situation occurs more than once?</p>	<p>A definition for emergency is “A serious, unexpected, and often dangerous situation requiring immediate action”.</p> <p>Despite emergencies not being expected, item 7 of the Schedule 1 requires that a WMP includes an explanation of how the title holder will identify, monitor, mitigate and otherwise deal with:</p> <ul style="list-style-type: none"> (a) a well integrity hazard and (b) a significant increase of an existing risk for the well. <p>This is to demonstrate that a title holder has systematically identified all the sources of risk and their impacts likely to directly or indirectly arise from the activity, whether arising from normal operations or potential emergency conditions (incidents), accidental or otherwise.</p> <p>Both regulation 10 and 11 provide exemption from prosecution if emergency remedial action is undertaken that is not accordance with the approved WMP. DMP will be aware of the well activities that are being undertaken, through monitoring of the daily drilling reports, and penalty provisions could be imposed for any that are not covered in an approved WMP when normal exploration, production or recovery well activities resume.</p> <p>If a titleholder considers that an emergency situation exists, DMP would encourage the titleholder to take immediate action to avoid injury to workers, adverse environmental impact or damage to the resource rather than seeking advice from DMP. However, DMP should be informed as soon as practicable after this. DMP will then be in a position to assess the emergency and the remedial action undertaken</p> <p>It would be unfair to penalise a titleholder for a genuine belief of an emergency but if it was subsequently found to be not, DMP has the option to penalise the titleholder under regulation 11 for not undertaking a well activity in accordance with the approved WMP. The penalty for this is \$10,000.</p>

No.	Regulation 10 – Requirement to have approved well management plan	DMP Response
26	s.2 (a) (iii) what constitutes “damage to a natural resource” may need to be defined.	Regulation (2)(a)(iii) has been amended to delete “natural resource” and replace this with “an underground formation that contains petroleum or geothermal energy resources, an aquifer or any other part of the environment”. This change is to align this emergency provision to the definition of the term “well integrity hazard”.
27	As currently written, this regulation does not outline any stipulated transitional arrangements. Further detail and clarification of transitional arrangements is needed for existing operations to transition to the new regulatory framework.	The PGER(RMA) Regs has been amended to include a new Part 10 for transitional provisions for WMPs.
28	An “emergency” should not exempt a title holder from a fine. “Significant discharge of fluids from the well” – ‘significant’ is not measurable, and depending on the consistency of the fluids, some toxic substances need only be found in trace amounts to be hazardous and place human and environmental health at risk.	Refer to response for comment 25.
29	Reg 10: penalties seem generally entirely petty and inappropriate – applies right through the document: i.e. regs 11. Reg 10(2): Why would there ever be need to exempt an “emergency”? A WMP (well management plan) should also be easily completed before commencement of the activity.	Refer to response for comment 25.

Amendments made since consultation draft

Regulation 10(2)(a)(iii) amended to delete “a natural resource” and include “an underground formation that contains petroleum or geothermal energy resources, an aquifer or any other part of the environment”. This is to align the wording to definition of the term “well integrity”.

Regulation 10(2)(c) amended to delete “12 hours” and replace this with “2 hours” to align with the PGER (Env) Regs.

No.	Regulation 11 – Requirement to undertake well activity in accordance with approved well management plan	DMP Response
30	An “emergency” should not exempt a title holder from a fine. “Significant discharge of fluids from the well” – ‘significant’ is not measurable, and depending on the consistency of the fluids, some toxic substances need only be found in trace amounts to be hazardous and place human and environmental health at risk.	Refer to response for comment 25.
31	Reg 11 creates an offence of undertaking an activity other than in accordance with “requirements of an approved well management plan”. Reg 13 deals with approving well management plans. Reg 13(8) states that “the Minister may approve the plan subject to conditions.” However, it is not all that clear that these conditions are “requirements of an approved well management plan”. Rather, one would think that the requirements would be set out in the plan itself, whereas conditions would be additional to the plan. If so, then you will need some kind of offence provision that applies to a breach of conditions of approval of a plan. Alternatively, one might amend the regs so that it is clear that a condition of approval and a requirement of a plan are both picked up by Reg 11.	A new definition of “requirement” has been included in regulation 4 to clearly explain what a “requirement” is in terms of a WMP.

Amendments made since consultation draft

Regulation 11(2)(a)(iii) amended to delete “a natural resource” and include “an underground formation that contains petroleum or geothermal energy resources, an aquifer or any other part of the environment”. This is to align the wording to definition of the term “well integrity”.

Regulation 11(2)(c) amended to delete “12 hours” and replace this with “2 hours” to align with the PGER (Env) Regs.

No.	Subdivision 2 – Obtaining approval of well management plan	DMP Response
32	Subdivision 2 Obtaining approval of WMP – Regarding WMP that can be submitted in parts for particular stages of the well activity, is each part subject to at least 30 days before the proposed start of any well activity to which the plan relates?	The first activity of a WMP will, ordinarily, be to drill a well and, in accordance with the Regulations, the Minister will have 30 days to make a decision after receiving the application. Other well activities will occur during the life of the well and timeframe for approving these can vary depending on the well activity to be undertaken and other factors. As the need for and the timing of future well activities cannot be predicted, timeframes for subsequent well activities cannot be prescribed in these Regulations. However, given the drilling/production demands on the titleholder and issues regarding costs and availability, DMP commits to early approval of any subsequent well activity following the initial drilling of a well.

No.	Regulation 12 – Application for approval of well management plan	DMP Response
33	s.2(b) A 30 day timeframe for application prior to start of activities doesn't allow much time for review by other agencies if required. Consider whether this needs to be longer to avoid the need for the Minister to give an extension each time as per regulation 12, s.2(b)(ii).	It is acknowledged that some well activities may require a longer timeframe for approval. However, for the PGER(RMA) Regs, the timeframe listed in sub-regulation (2)(b)(i) for submission of a WMP will remain as "at least 30 days before the proposed start of any well activity" to maintain consistency with the equivalent provision in the Commonwealth OPGGS(RMA) Regs.
34	may apply... of WMP" – must always be a proper EMP, which would include the plans for the well field and WMP's as appropriate. Seems as if "may" implies proponent decides whether it wishes to file any plans?	The use of the verb "may" in regulation 12(1) is to recognise that undertaking a well activity is one of a number of options that a titleholder may undertake following the grant of an exploration permit. A well activity may not be necessary if surveys and desktop studies do not reveal a commercial discovery. There is no discretion for a titleholder who wishes to undertake a well activity in a title area as regulation 10 prescribes that an approved WMP must be in force for undertaking that activity in that title area. Ultimately, however, if a WMP and EMP is not submitted, the titleholder will not be granted approval to undertake the well activity.

No change to Regulation 12 since consultation draft.

No.	Regulation 13 – Decision on well management plan	DMP Response
35	Noting s15A of the PGER Act, the requirement for the Minister of Mines and Petroleum to approve a plan in only 30 days may be insufficient, particularly if a sensitive water resource is potentially affected, although the regulations do allow the time to be extended.	Section 15A approvals under the PGERA67 are separate to the approval of a WMP. Well activities to be conducted in land that is reserved, declared or otherwise dedicated under the <i>Land Administration Act 1997</i> or any other written law must have a Section 15A approval before they can commence. Given this, it is important that titleholders provide details of their proposed well activities to DMP as early as possible.
36	[Petroleum/mining industry representative body] notes that a number of sections (e.g. S.13 and S.21) in the proposed regulations refer to statutory timeframes; however it is understood that these will be subject to the 'stop the clock' mechanism. This mechanism provides DMP with flexibility to place an assessment on hold, therefore potentially requiring more time than the stated statutory timeframe, if it believes that it has not received sufficient information to fully assess a proposal. This approach can result in protracted delays to approvals.	Comment noted. DMP approval performance measures exclude the time taken by processes outside of DMP's control. That is, when an application process is outside of DMP's control (i.e. with the proponent or another agency), the time taken during this process is not included when calculating DMP's approval performance. The clock is started again when DMP receive agency advice or proponent information. STC events and dates are recorded on the DMP online lodgement and approval tracking system. Refer to DMP Standard Timeline Targets at http://www.dmp.wa.gov.au/7434.aspx

No.	Regulation 13 – Decision on well management plan	DMP Response
37	[Petroleum/mining industry representative body] encourages DMP to ensure that clear guidance exists so that operators are aware of regulatory expectations relating to information provision. [Petroleum/mining industry representative body] also would support a once-off “stop the clock” arrangement whereby requests for more information are all tabled simultaneously thereby preventing a concatenation of requests.	Further to the response for comment 36, it is acknowledged ongoing consultation between titleholder and DMP is critical in the preparation of WMPs. This will be mutually beneficial to both parties with DMP providing advice and guidance on the information required and the title holder explaining the well activity to be undertaken. In this way, there should be a more streamlined approval process with less iterations of the WMP required.
38	Reg 13(1): should provide here that further information may be called for to enable decision – applies through regs.	Reg 13 lists the options available to the Minister following receipt of an application for approval of a WMP. Sub-regulation (1)(c) states that the Minister must give written notice stating that a decision is unable to be made without further assessment of the plan. The information required in regard to the further assessment is set out in sub-regulation (3) and states: “A notice under sub-regulation (1)(c) must specify- (a) any further information the Minister requires to be included in the plan, and (b) the date after which the Minister will commence further assessment of the plan.”
39	Reg 13(7): provide here for what happens if application rejected	Reg 13(7) outlines that after completing further assessment of an application for a WMP, the Minister must either approve or refuse to approve the plan. Reg 14 sets out the requirements of advising the titleholder of the Minister’s decision and, if an application is rejected, the reasons for the decision. At that time, the titleholder can decide whether to resubmit the application or let it lapse.
40	Reg 11 creates an offence of undertaking an activity other than in accordance with “requirements of an approved well management plan”. Reg 13 deals with approving well management plans. Reg 13(8) states that “The Minister may approve the plan subject to conditions.” However, it is not all that clear that these conditions are “requirements of an approved well management plan”. Rather, one would think that the requirements would be set out in the plan itself, whereas conditions would be additional to the plan. If so, then you will need some kind of offence provision that applies to a breach of conditions of approval of a plan. Alternatively, one might amend the regs so that it is clear that a condition of approval and a requirement of a plan are both picked up by Reg 11.	Refer to response for comment 31.

No change to Regulation 13 since consultation draft.

No.	Regulation 14 – Notice of decision	DMP Response
41	Rejection – what then?	If an application for a WMP is refused, the titleholder is notified and given the reasons for the decision in regulation 14(b). This gives the titleholder the opportunity to resubmit the application taking into account the reasons for refusal of the initial application.

Amendments made since consultation draft

Regulation 14 amended to clarify the information to be provided by the Minister in the written notice of the decision. This includes deleting “the terms of decision” previously in (a).

No.	Regulation 15 – Date on which well management plan takes effect	DMP Response
	No comments received	N/A

Amendments made since consultation draft

As a result of changes to regulation 14, regulation 15 has been amended to update the regulation reference for the date when the plan takes effect.

No.	Regulation 16 – Criteria for approval of well management plan	DMP Response
42	Noting s15A of the PGER Act, requiring the Minister of Mines and Petroleum to approve a plan; the criteria in the regulations is limited and should include consideration of the views of other Ministers. s.1 (a) Should this apply to sections 1 and 2 under regulation 17 to cover other information that may be included?	Section 15A refers specifically to the requirement to consult with other Ministers to access land “reserved, declared or otherwise dedicated under the <i>Land Administration Act 1997</i> or any other written law” to determine conditions for access. This is an important requirement but is not a requirement in the approval of a WMP. As it is stipulated in the PGERA67, it does not need to be reiterated elsewhere in the subsidiary PGER (RMA) Regs.
43	s.1 (c) Clarification is sought on whether risks mentioned in this regulation are identified in the Environment Plan required under the PGER Environment Regulations 2012, or in the well management plan under the RMA regulations.	The risks that are required to be identified for this Regulation are specifically related to the well activity to be undertaken. These would be risks to well integrity or the underground formation that contains petroleum or geothermal energy resources. Some of these risks may include environmental factors which would overlap the risks identified in the EP. (eg: oil spills).
44	s.1 (d) In addition to managing risks relating to the well activity itself, this section needs to include provision for the management of risks to existing land use / tenure.	Managing risks relating to land use or tenure is covered by the PGER(Env) Regs.
45	[Petroleum/mining industry representative body] suggests that section 16(1)(c)(i) be worded “in accordance with sound engineering principles as defined in relevant codes, standards, specifications or other documents.”	Comment noted but the wording is to remain the same as that for the equivalent regulation in the Commonwealth OPGGS(RMA) Regs.
46	In 16(c) <i>“the plan shows that the risks identified by the title holder in relation to each well activity will be managed — (i) in accordance with sound engineering principles, codes, standards and specifications; and (ii) if the activity relates to exploration for or the recovery of petroleum, in a manner that is consistent with good oil-field practice;</i> The underlined sections are vague. Measurable provisions must be defined. Reg. 16d – Again, <i>“significant new detrimental risk or effect”</i> is vague, specifics must be outlined and measurable. This regulation implies existing detrimental risks are acceptable and need not be addressed. carry externally (so not just on the practice/project itself but also on environment, health, other industries eg. agriculture) must also be considered here and regulated.	The PGER (RMA) Regulations require the submission of a WMP which: <ul style="list-style-type: none"> • is appropriate for the nature and scale of the activity or proposed use; • demonstrates that the drilling impacts and risks of the activity will be ALARP; • provides for appropriate well management performance objectives, standards and measurement criteria; and • complies with the Act, the relevant Petroleum (RMA) Regulations and applicable State statutes. The move from prescriptive regulation to objective-based regulation places the emphasis on petroleum and geothermal titleholders to identify risks and effects, establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use. The risks that are required to be identified for this Regulation are specifically related to the well activity to be undertaken and this would include hydraulic fracturing. These would be risks to well integrity or the underground formation that contains petroleum or geothermal energy resources. Some of these risks may include environmental and health factors which would overlap the risks required to be identified in the EP in accordance with the PGER(Env) Regs.

No.	Regulation 16 – Criteria for approval of well management plan	DMP Response
47	Reg 16: why should the Minister be obliged to approve a WMP? Or at least there should be much expanded list of reasons for rejection an application. Reg 16(1)(c): “sound engineering principles, codes, standards and specifications” and “in a manner that is consistent with good oil-field practice” – utterly open-ended. Require much clearer provisions with measurable provisions. Reg 16(d): appears that it is only concerned about “significant detrimental risk or effect” to any fracking activity. No concern about the fracking itself potentially being detrimental to other activities (tourism, farming, community, health etc).	<p>These Regulations set out the requirements for titleholders to comply with in the onshore exploration and recovery of petroleum and geothermal energy resources. As such, this Regulation is specifically written “The Minister must approve a WMP if . . .satisfied that . . .” to provide confidence to titleholders, and the petroleum and geothermal industries in general, that approval will be granted provided that all the required information is submitted.</p> <p>Sub-regulation (2) further details that “The Minister must not approve a WMP if the Minister is not satisfied that the plan meets the requirements in sub-regulation (1).</p> <p>Hydraulic fracturing is one of a number of well activities that require an approved WMP. Environmental and health concerns from hydraulic fracturing are required to be identified in the EP in accordance with the PGER(Env) Regs.</p>

No change to Regulation 16 since consultation draft.

No.	Regulation 17 – Content of well management plan	DMP Response
	No comments received	N/A

No change to Regulation 17 since consultation draft.

No.	Regulation 18 – Status of well management plan	DMP Response
48	A partial well management plan should not be accepted as an approved well management plan. This may result in piecemeal management.	<p>The partial approval of a WMP is a feature that WA has adopted from the Commonwealth OPGGS(RMA) Regs.</p> <p>Partial approval recognises the broad lifecycle of a well, which may evolve over many years from the exploration phase, through production and recovery to final decommissioning. It is not feasible for titleholders to fully address all aspects of a WMP as, there may be numerous activities that might occur that were not originally envisaged.</p>

Amendments made since consultation draft

Regulation 18 has been amended in (1)(b) and (2)(b) to delete “variation” and insert “revision”.

No.	Subdivision 3 – Variation of well management plan	DMP Response
49	[Petroleum/mining industry representative body] supports renaming ‘variations’ to ‘revisions’ to bring WMP requirements in line with similar requirements for safety cases.	Comment agreed. The regulations in this subdivision have been amended to “revision” instead of “variation” consistent with the PGER(Env) Regs and the PGER (MoS) Regs.

Amendments made since consultation draft

The heading of subdivision 3 has been amended to delete “variation” and insert “revision”.

No.	Regulation 19 – Application for approval of variation of well management plan	DMP Response
	No comments received	N/A

Amendments made since consultation draft

Regulation 19 has been amended to delete “variation” and insert “revision”.

No.	Regulation 20 – Application for approval of variation required in certain circumstances	DMP Response
50	(b) should read "...the occurrence or potential occurrence of a significant new detrimental risk to or effect on a well's integrity or a well activity..."	Comment agreed. Regulations 20 (a), (b) and (c) have been amended to insert "the integrity of a well".
51	Clarification is required on what constitutes a variation (what is a "significant impact on a well activity", a "significant new detrimental risk to or effect on a well activity", and a "significant increase in a detrimental risk to or effect on a well activity") and whether there are minor and major variations.	<p>This wording in this regulation is essentially the same as that in regulation 5.12 of the Commonwealth OPGGS(RMA) Regs.</p> <p>The Guidelines will be updated to provide further information and will also include a matrix that sets out the how a WMP is to be amended following well activity changes.</p> <p>Under current requirements, a full WMP will be required for a new drilling activity. Well activities after this will be appended to the WMP either by way of a written notification or a revision of a WMP.</p> <p>This will be dependent on whether the change in well activity is covered in the approved WMP, and an assessment of the additional or modified risk.</p>
52	Reg. 20a – <i>"a change in the understanding of the geology or reservoir that may have a significant impact on a well activity to which the approved well management plan relates;"</i> – Who is this monitored by? If it's the title holder or the DMP then an independent body must also be involved in this process. How can the citizens of WA trust the title holder to be transparent in this scenario? There are no guarantees here. More defined regulation required.	<p>The approved WMP for the well activity undertaken by the titleholder will address existing known risks.</p> <p>The emphasis with this regulation is for the titleholder to identify any significant, significantly increased and/or new risks on the well activity to which the WMP relates and for strategies for minimising and managing them to be added to the plan by way of a revision to the WMP.</p> <p>DMP undertakes an assessment of the risks contained in the revision of the WMP and, if satisfied that the plans and strategies address the changes identified, will approve the revision of the WMP.</p> <p>DMP carries prime responsibility for regulating mineral and energy resources in WA and ensuring the responsible development of these resources as well as protection of the community from dangerous goods.</p>
53	Reg. 20b – <i>"the occurrence or potential occurrence of a significant new detrimental risk to or effect on a well activity to which the approved well management plan relates;"</i> Again, "significant new detrimental risk..." is vague; specifics must be outlined and measurable. Who assesses 'potential occurrence' and again, this is leaving the onus on the title holder to choose be transparent, but there is no guarantee the title holder will fully assess this scenario with the best interests of human and environmental health in mind.	<p>The move from prescriptive regulation to objective-based regulation places the emphasis on petroleum and geothermal titleholders to identify risks and effects and establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use.</p> <p>DMP undertakes an assessment of the risks contained in the revision of the WMP and, if satisfied that the plans and strategies address the changes identified, will approve the revision of the WMP.</p>
54	20 (b) Relating to the potential occurrence of a significant new risk to or effect on a well activity requiring an application for approval of variation. Given that the process for identifying risks is generally through a hazard identification process involving a group of qualified people. Does this mean that a risk that is not identified constitutes an offence? Who is liable for the related fine of \$10,000? The members of the risk assessment group, the meeting chairman, the manager responsible or the company?	The responsibility for the submission of a revision of a WMP in accordance with regulation 20 is with the titleholder. Accordingly, a penalty for non-compliance, such as non-inclusion of a potential risk, could be imposed on the titleholder.

No.	Regulation 20 – Application for approval of variation required in certain circumstances	DMP Response
55	20 (c) Can you provide some examples of a significant increase in detrimental risk to or effect on a well activity? If such a risk is identified during the course of a well activity can the operator act immediately to mitigate the risk prior to the submission of an application for approval of variation of the well management plan?	<p>The move from prescriptive regulation to objective-based regulation places the emphasis on petroleum and geothermal titleholders to identify risks and effects and establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use. Due to the specific “fit for purpose” nature of WMP’s, titleholders are encouraged to have early discussion with DMP to streamline planning and preparation of the WMP. In these discussions, specific examples can be provided to assist in the process.</p> <p>If the newly identified risk is considered to be an emergency situation, regulation 11 allows the titleholder to undertake a well activity that is not in accordance with the approved WMP to avoid the likelihood of injury, significant discharge of fluids or damage to the underground formation.</p>

Amendments made since consultation draft

Regulation 20 has been amended to delete “variation” and insert “revision”. Sub-reg (a) amended to replace “reservoir” with “underground formation”. Sub regs (a)(b) and (c) amended to include “the integrity of a well” as a circumstance where revision is required.

No.	Regulation 21 – Decision on application for approval of variation	DMP Response
56	[Petroleum/mining industry representative body] notes that a number of sections (e.g. S.13 and S.21) in the proposed regulations refer to statutory timeframes; however it is understood that these will be subject to the ‘stop the clock’ mechanism. This mechanism provides DMP with flexibility to place an assessment on hold, therefore potentially requiring more time than the stated statutory timeframe, if it believes that it has not received sufficient information to fully assess a proposal. This approach can result in protracted delays to approvals.	Refer to response for comment 36.
57	[Petroleum/mining industry representative body] encourages DMP to ensure that clear guidance exists so that operators are aware of regulatory expectations relating to information provision. [Petroleum/mining industry representative body] also would support a once-off “ stop the clock” arrangement whereby requests for more information are all tabled simultaneously thereby preventing a concatenation of requests.	Refer to response for comment 37.
58	Clarification is required on what constitutes a variation (what is a “significant impact on a well activity”, a “significant new detrimental risk to or effect on a well activity”, and a “significant increase in a detrimental risk to or effect on a well activity”) and whether there are minor and major variations.	Refer to response for comment 51.
59	It is noted that the approval of a Well Management Plan has been allocated an approval timeframe of 30 days, with a variation to that approval also provided 30 days for approval. [Petroleum/mining industry representative body] queries whether the timeframe for a variation requires the same timeframe for a new WMP especially as some variations maybe requested while operations are in progress. In this circumstance 24hours is more appropriate and corresponds to the period the industry allows itself for decisions which need a rapid response.	Refer to response for comment 32

Amendments made since consultation draft

Regulation 21 has been amended to delete “variation” and “varied” and insert “revision” and “revised” where applicable.

No.	Regulation 22 – Notice of decision	DMP Response
	No comments received	N/A

Amendments made since consultation draft

Regulation 22 has been amended to clarify the information to be provided by the Minister in the written notice of the decision. This includes deleting “the terms of decision” previously in (a). Regulation 22 has also been amended to delete “variation” and insert “revision”.

No.	Regulation 23 – Date on which variation takes effect	DMP Response
	No comments received	N/A

Amendments made since consultation draft

As a result of changes to regulation 22, regulation 23 has been amended to update the regulation reference for the date when the plan takes effect. Regulation 23 has also been amended to delete “variation” and “varied” and insert “revision” and “revised” where applicable.

No.	Regulation 24 – Variation required by the Minister	DMP Response
	No comments received	N/A

Amendments made since consultation draft

Regulation 24 has been amended to delete “variation” and “vary” and insert “revision” and “revise” where applicable.

No.	Regulation 25 – Objection to requirement to vary approved well management plan	DMP Response
	No comments received	N/A

Amendments made since consultation draft

Regulation 25 has been amended to delete “variation” and “vary” and insert “revision” and “revise” where applicable.

No.	Regulation 26 – Decision on objection	DMP Response
	No comments received	N/A

Amendments made since consultation draft

Regulation 26 has been amended to clarify the information to be provided by the Minister in the written notice of the decision. This includes deleting “the terms of decision” previously in (a).

No.	Regulation 27 – Title holder required to comply with notice	DMP Response
	No comments received	N/A

No change to Regulation 27 since consultation draft.

No.	Regulation 28 – Termination of well management plan	DMP Response
60	A WMP should also terminate upon relinquishment of the tenure.	Relinquishment of tenure is certainly a reason to terminate a WMP but DMP does not agree that a WMP should automatically terminate when a title is relinquished. Relinquishment of tenure is taken to mean either: a) surrender or partial surrender of permits etc under section 98 of the PGERA67, and b) the mandatory relinquishment of blocks as part the renewal of a permit.

No.	Regulation 28 – Termination of well management plan	DMP Response
		<p>In regard to a) there are provisions in section 98(2)(d) requiring wells to be plugged or closed off prior to the Minister giving consent to the surrender or partial surrender of a permit.</p> <p>In regard to b) there is also a need to ensure that any wells are appropriately “terminated” prior to any blocks being relinquished. Depending on the status of the well, this could mean suspension or full decommissioning.</p> <p>This requirement to undertake appropriate termination action will be made a condition of the renewal process and the titleholder will be required to submit a revision to the WMP appropriate to the “termination” action for the well.</p>
61	<p>Would like to understand the reason for the proposed automatic termination of a well management plan after 5 years. A well is usually constructed with an intended lifespan of significantly greater than 5 years. In [Petroleum company's] view, a well management plan is for the life of a well. If monitoring and maintenance continue in accordance with the well management plan and there are no integrity issues, no need for automatic termination of a well management plan after a prescribed 5-year period. [Petroleum company] would suggest that it would be more appropriate to allow well management plans to remain current for the life of the well and be updated every 5 years, or as required earlier</p>	<p>The 5 year timeframe is a standard legislative fixture which recognises a length of time where there would be relatively constant technology and employee retention for both industry and Regulators. To go beyond a 5 year timespan runs the risk of technology changes and employee turnover which would introduce too many uncertainties.</p> <p>The timeframe is consistent with that for WOMP's in the Commonwealth OPGGS(RMA) Regs and also for EPs under the PGER(Env) Regs and Safety Plans under the PGER(MoS) Regs.</p>
62	<p>Reg. 28d – <i>“An approved well management plan ceases to be in force at the earliest of the following —at the end of the period of 5 years starting when the plan was approved, whether or not the plan has been varied since being approved”</i>. Then what? More details required on what this implies.</p>	<p>A timeframe of 5 years for a WMP is imposed in recognition of this being an accepted length of time where there would be relatively constant technology and employee retention for both industry and Regulators. To go beyond a 5 year timespan runs the risk of technology changes and employee turnover which would introduce too many uncertainties.</p> <p>The timeframe is consistent with that for WOMP's in the Commonwealth OPGGS(RMA) Regs and also for EPs under the PGER(Env) Regs and Safety Plans under the PGER(MoS) Regs.</p> <p>It is in the titleholder's interests to submit a new WMP for approval before the 5 year timeframe expires as after this, in accordance with sub-regulation (b) of this regulation, the titleholder will be in breach of regulation 10 by not having an approved WMP, and would not be allowed to continue any well activities.</p>

Amendments made since consultation draft

Regulation 28(d) has been amended to clarify that the expiry date for an approved WMP is the end of the period of 5 years starting on the date on which the plan takes effect.

No.	Regulation 29 – Reasons for withdrawal of approval	DMP Response
63	<p>If the Minister withdraws a well management plan, post well commissioning, what management practices are left in place to prevent/address risk, hazard mitigation? Provisions for management of well closure should be in place in the instance of withdrawal of approval.</p>	<p>Withdrawal of approval of a titleholder's WMP by the Minister under regulation 29, will mean that the titleholder will not be able to undertake any well activities.</p> <p>DMP will issue a ministerial direction under section 95 of the PGERA 67 requiring the titleholder to suspend all well activities and to take appropriate well management action. The well management action required would vary depending on the circumstances for the withdrawal. For a minor short-term reason, the action could be minimal but major reasons may require a well to be suspended.</p>

No change to Regulation 29 since consultation draft.

No.	Regulation 30 – Notice of proposal to withdraw approval	DMP Response
64	Is there a capacity to have an objection, otherwise the decision is made and there is no need for Regulation 31.	This regulation is the means for the Minister to advise the titleholder of the intent to withdraw approval of the WMP. It is not the final decision and the titleholder has, in sub-regulations (b)(ii) and (iii), the opportunity to provide any information for the Minister to consider before the decision to withdraw approval.
65	Petroleum/mining industry representative body] notes that the RMA regulations propose to provide the Minister with powers to withdraw approval for a Well Management Plan. While [Petroleum/mining industry representative body] assumes that it would be rare that this power would be required, as any issues should be remedied prior to such action, it is noted that no provisions currently exist for an operator to object to Section 30. It is [Petroleum/mining industry representative body's] view that the withdrawal of an application should be preceded by a remedy notice and that an operator should have the ability to object to the proposed withdrawal of their WMP.	It is agreed that it would be rare for this regulation to be applied but there needs to be a penalty for the reasons provided in regulation 29. However, this regulation is not the final step in the withdrawal process with the titleholder, in sub-regulations (b)(ii) and (iii), having the opportunity to provide any information for the Minister to consider before the decision to withdraw approval.

No change to Regulation 30 since consultation draft.

No.	Regulation 31 – Decision to withdraw approval	DMP Response
66	s.1(b) If a decision has already been made that the Minister believes it may be necessary to withdraw approval of a well management plan (under Regulation 30, s.1 and a notice already given under Regulation 30, s.1(a); then this regulation is not relevant.	Refer to response for comment 64.
67	s.2(b) Should not give notice for approval if this is not the case.	The process of the withdrawal of a WMP outlined in regulations 29, 30 and 31 follows similar provisions in the Commonwealth OPGGS(RMA) Regs. The notification process gives the opportunity for the titleholder to provide any information for the Minister to consider before the decision to withdraw approval.
68	s.3(b) If well is already constructed, it needs to be decommissioned – include requirement.	For WMPs of existing wells that that have had more than one approval, the titleholder will still have responsibility for the management of the well(s), including risk/ hazard mitigation, in accordance with the last approved WMP. It does not necessarily mean that the well needs to be decommissioned.

Amendments made since consultation draft

Regulation 31 has been amended to clarify the information to be provided by the Minister in the written notice of the decision. This includes deleting “the terms of decision” previously in (3)(a) and to also include the date of when the withdrawal takes effect.

No.	Regulation 32 – Relationship between withdrawal and other provisions	DMP Response
	No comments received	N/A

No change to Regulation 32 since consultation draft.

No.	Regulation 33 – Requirement to control well integrity hazard or risk	DMP Response
69	(b) should include provisions for control of well integrity hazard or risk to the receiving environment (i.e. need to cover control of hazards and risks of related activities such as wastewater ponds, sumps, storage and management of petroleum and other chemicals, etc.). Noting ‘integrity’ under these regulations (c) is subject only to risks that have been reduced to a level that is as low as reasonably practicable.	The primary focus of Part 3 of the PGER (RMA) Regs is to ensure well activities relating to exploration for and recovery of petroleum or geothermal energy resources are managed in a proper and workmanlike manner, in accordance with good oilfield practice and for optimum long-term recovery. Management of environmental risks and hazards for onshore petroleum and geothermal energy resources is required under the PGER (Env) Regs.

No.	Regulation 33 – Requirement to control well integrity hazard or risk	DMP Response
70	This is overarching strong legislation useful for prosecution if there are any significant releases to environment that impact public health. If any hazard is identified and not controlled, the Well Management Plan (WMP) can be withdrawn or a fine imposed, thus providing the regulator an ability to immediately cause appropriate action to minimise harm and cause for remediation to be implemented. However, there is no requirement for or reference to an emergency response plan (ERP) following loss of well integrity, or failure of the drilling safety devices (e.g., blow-out prevention equipment, casing and barrier integrity) in the RMAA regulations. It is recommended that this be referenced in all PAGER guidelines to ensure elements are interlinked in a systematic manner. The RMAA guidelines would be an appropriate document to include a figure to show how all the PAGER Regulations are linked. For example, the PAGER (Safety Management) Regulation 42 (Dangerous occurrence) requires the ERP and its activation. This will be enacted if there is loss of well integrity with significant release of fluids/emissions.	<p>The PGER (Env) Regs and PGER (MoS) Regs have provisions for emergency response plans (ERP) to cover hazards and risks to the immediate environment and workers and also the surrounding environment and external stakeholders</p> <p>Regulation 15(10) of the PGER(Env) Regs requires that the implementation strategy for the EP must include an oil spill contingency plan that sets out details of emergency response arrangements to be implemented if an oil spill occurs.</p> <p>Regulation 25 of the PGER(MoS) Regs details that a SMS must describe a response plan designed to deal with possible emergencies.</p> <p>Item 7 of Schedule 1 requires that a WMP must include “an explanation of how the titleholder will identify, monitor, mitigate or otherwise deal with -</p> <p>(a) a well integrity hazard, and</p> <p>(b) a significant increase in an existing risk for the well, including the possibility of continuing a well activity for the purpose of dealing with the well integrity hazard or the risk.</p> <p>There is, however, no need for similar emergency response provisions given that the object of the PGER (RMA) Regs is to ensure well activities relating to exploration for and recovery of petroleum or geothermal energy resources are properly managed.</p> <p>If a well emergency were to occur, the risks and hazards to the immediate environment and workers and the surrounding environment and external stakeholders would be covered by the PGER (Env) Regs and PGER (MoS) Regs.</p>
71	33 (b) (i) Does this mean if an operator identifies a well integrity hazard not previously identified, then the operator has committed an offence? An example is that during a routine well monitoring program of a well, a well integrity hazard (such as an external casing leak) is identified. This is reported to the DMP and triggers an offence?	Regulation 33 requires a titleholder to control any identified new or significant increase in existing well integrity hazards or risks for the well, during the operation of a well in a title area. Penalty provisions would be enforced if a titleholder does not control the well integrity hazard or risk as described in r33(c).
72	33 (b) (ii) Does this mean that if the operator identifies a significant increase in an existing risk for the well, then the operator has committed an offence?	Refer to response for comment 71.

No change to Regulation 33 since consultation draft.

PART 4 – DISCOVERY ASSESSMENT REPORTS

No.	Regulation 34 – Application of part	DMP Response
	No comments received	N/A

No change to Regulation 34 since consultation draft.

No.	Regulation 35 – Minister may request additional information for discovery assessment report	DMP Response
	No comments received	N/A

No change to Regulation 35 since consultation draft.

No.	Regulation 36 – Requirement to provide discovery assessment report	DMP Response
73	<p>s.1(b) Provision should also be made for the reporting of water resources discovered through petroleum or geothermal exploration.</p> <p><i>Noting that under the Petroleum and Geothermal Energy Resources Act 1967, Part III, Division 5, s113 – “Where water is discovered in a permit area, a drilling reservation, a lease area or a licence area, the permittee, holder of the drilling reservation, lessee or licensee, as the case may be, shall, within a period of one month after the date of the discovery, furnish to the Minister, in writing, particulars of the discovery.”</i></p> <p><i>Also, under Part III, Division 5, s.91,2(d)(ii) – “proponents are required to keep separate such of the sources of water, if any, discovered in that area as the Minister, by instrument in writing served on that person, directs.”</i></p>	<p>As noted in the comment provided, the reporting of water resources and particulars of the discovery is covered in primary legislation, section 113 of the PGERA67.</p> <p>In view of this, it does not need to be reiterated in the subsidiary PGER(RMA) Regs.</p>
74	<p>s.1(c) Suggest amending to: “details of . . .structure or formation . . .in which the petroleum or geothermal energy resources are located.”</p>	<p>Sub-regulation (1)(c) has been amended to now read “details of the geological structure or underground formation in which the petroleum is located or the geothermal energy resources are located”.</p>
75	<p>s.1(e) Suggest adding that if water is encountered, the rate or quantity of water must also be estimated (i.e. separate from the petroleum or geothermal fluids). The quality of water should also be determined. It is noted that under Part III Div.5, s113(1), information of a water discovery must be provided to the Minister for Mines and Petroleum in one month.</p>	<p>The requirement for the notification of the discovery of water to the Minister for Mines is contained in section 113 of the PGERA67. The PGER(RMA) Regs are purely for the regulation of petroleum and geothermal resources and, accordingly, provisions for reporting of water are not necessary.</p>
76	<p>s.1(i) could be simplified to “ the information specified under regulation 35.”</p>	<p>Comment noted. No change required.</p>
77	<p>s.2(a) It is noted that details of any discovery of water must be provided to the Minister for Mines and Petroleum within one month under the <i>PGER Act 1967</i>. A 30 day period in line with this the Act is recommended.</p>	<p>As detailed in the response for comment 75, the PGER(RMA) Regs are purely for the regulation of petroleum and geothermal resources and provisions for reporting of water are not necessary. The reporting of petroleum or geothermal resource discoveries will therefore remain as 90 days.</p>
78	<p>Regulation 36(2) requires that an operator provide the Minister a discovery assessment report for the title area within 90 days of the discovery. [Petroleum/mining industry representative body] notes that the definition and criteria of a ‘discovery’ will likely need to be clarified, given the increase in exploration for shale and tight gas, which is more difficult to demonstrate. While a conventional resource typically demonstrates a commercial flow rate relatively readily, a shale or tight gas reservoir might only demonstrate a commercial resource if it is accessed through multiple appraisal wells that have been fracture stimulated. Therefore the ‘commerciality’ of a resource and therefore whether it indicates a ‘discovery’ should be further considered between DMP and industry.</p>	<p>The regulations in Part 4 are to provide for the notification of the discovery of conventional or unconventional petroleum or geothermal resources to the Minister including where it is, its characteristics and estimates of quantities found.</p> <p>Notification of discovery has been based on the recovery of hydrocarbons or geothermal resources to the surface rather than commerciality factors. Further information on the term “discovery” as provided in the Explanatory Notes for the PGER(RMA) Regs, is listed below:</p> <p>“Discovery is used in the regulations to refer to a number of possible situations, as follows:</p> <ul style="list-style-type: none"> • The term has been applied to a petroleum accumulation/ reservoir whose existence has been determined by its actual penetration by a well, which has also clearly demonstrated the existence of moveable petroleum by flow to the surface or at least some recovery of a sample of petroleum, which has the potential for economic development. Log and/or core data may be used as proof of existence of moveable petroleum if an analogous reservoir is available for comparison.

No.	Regulation 36 – Requirement to provide discovery assessment report	DMP Response
		<ul style="list-style-type: none"> • Another possible definition is that a discovery is either: <ul style="list-style-type: none"> ◦ The first penetration within a title of a discrete geological structure or trap which encounters petroleum; or; ◦ The first penetration within an exploration permit of a discrete geological structure or trap which encounters petroleum, even if already known or inferred from an adjacent title or titles; or; ◦ The first penetration of a zone or zones of a known or contiguous geological structure within a title that adds resources, beyond that booked by the initial discovery well. • A discovery is one petroleum pool or several petroleum pools for which one or several exploratory wells have recovered or flowed petroleum from a porous and permeable reservoir interval through testing, sampling and/or logging.”
79	<p>[Petroleum company] recognises the importance of notifying petroleum resource discoveries to the Minister in a timely manner. However [petroleum company] is concerned about the prescriptive nature of the list of required information for a discovery assessment report set out in regulation 36 and the timeframe in which the report is required. Following a discovery of a petroleum resource, there is likely to be significant uncertainty as to the nature, size and other aspects of the resource.</p> <p>To provide greater certainty about the resource, further investigations will almost always be required. Given the complexity of the sub-surface environment, a timeframe of 90 days is likely to be unachievable to finalise investigations and provide the discovery assessment report. Additionally, any petroleum discovery is likely to be commercially sensitive and, in order to properly assess and further verify the resource, some of the information required as part of the discovery assessment report may be inappropriate for public release at the time required under the draft Regulations.</p> <p>In light of this, [petroleum company] suggests that a longer time period, such as 6 months, would be more practicable, and that, given the Ministerial discretion to request information under regulation 35, a less prescriptive list of the required content for a discovery assessment report is included in regulation 36. This would more closely align with the intention that the regulatory regime be objective-based rather than prescriptive.</p>	<p>The 90 day timeframe for the provision of discovery assessment reports is the same as that currently required under the Schedule of Onshore Petroleum Exploration and Production Requirements 1991 and the Schedule of Geothermal Exploration and Production Requirements 2009.</p> <p>The information required in regulation36(1), is also the same as that required under the Commonwealth OPGGS(RMA) Regs in order to maintain consistency across jurisdictions. It should be noted that under sub-regulation (2)(b) the Minister may authorise a longer period for the titleholder to give the report if required.</p> <p>Commercially sensitive information is covered in regulation 83. This regulation states that if documentary information is considered to be commercially sensitive, it is permanently confidential information.</p>
80	<p>Is (2)(b) complete? It is difficult to understand. This may need some rewording to assist with clarity and to ensure the desired interpretation occurs. Suggestion: – Wording to be amended to read “this period will be specified by the Minister”.</p>	<p>Comments noted. DMP believes that no change is required.</p>

Amendments made since consultation draft

Regulation 36(1)(c) has been amended to include “underground formation”

PART 5 – ANNUAL ASSESSMENT REPORTS

No.	Regulation 37 – Requirement to provide annual assessment report	DMP Response
81	Add – 4) The Minister may request additional information to that in the attached schedules.	DMP does not agree with this suggested change as it will not provide transparency or give certainty to the titleholder in the information to be provided in the annual assessment report. DMP's approach, in the drafting of these regulations, is to ensure that all information required for annual assessment reports is listed in Schedule 2 so that the titleholder is not confronted with additional and unexpected requirements.
82	37 (1) (a) Clarification sought: 30 days after the day on which the year of the term ends implies the 30th January of the year the term ends. So if the title term ends 21 June 2014, the annual assessment report needs to be submitted by 30 January 2015?	The "year of a term of a title" commences on the day that the title comes into force or on any anniversary of that day. So, in the example provided, the annual assessment report would need to be submitted by 20 July 2014.

No change to Regulation 37 since consultation draft.

No.	Regulation 38 – Reports may be combined	DMP Response
	No comments received	N/A

No change to Regulation 38 since consultation draft.

No.	Regulation 39 – Assessment report for part of year	DMP Response
	No comments received	N/A

No change to Regulation 39 since consultation draft.

PART 6 – FIELD MANAGEMENT PLANS FOR PETROLEUM RECOVERY

No.	Part 6 – Field management plans for petroleum recovery	DMP Response
	No comments received	Field development plans have been retitled "field management plans" to more accurately describe that petroleum recovery regulations cover the whole-of-life management of the field rather than just development of the field.

No.	Regulation 40 – Terms used	DMP Response
	No comments received	N/A

No change to Regulation 40 since consultation draft.

No.	Regulation 41 – Requirement to have approved field management plan	DMP Response
83	Need to define “appraisal basis.”	<p>In accordance with section 44 of the PGERA67, a permittee or holder of a drilling reservation must notify DMP of the discovery of petroleum. Discovery assessment reports are then submitted as detailed in Part 4 of these Regulations.</p> <p>Before applying for a Retention Lease or Production Licence, the permittee or holder of a drilling reservation must identify the block or blocks which cover the area of the discovery.</p> <p>Where a location is declared over a discovery, the permittee or holder of a drilling reservation may undertake further exploration and/or appraisal activities within the Location to determine more accurately the extent of the discovery.</p> <p>Approval of exploration or appraisal drilling, well testing activities is covered under Part 3 – Management of Well Activities.</p> <p>The permittee or holder of a drilling reservation has two years after the Declaration of Location in which to apply for either a Retention Lease or Production Licence. At this time, a FMP is required to be prepared and submitted to DMP.</p>
84	Where are the boundaries of a “field” determined?	<p>The boundaries for a field are determined as part of the preparation of a FMP which is required to be submitted to DMP prior to the development of an oil or gasfield.</p> <p>The FMP will cover:</p> <ul style="list-style-type: none"> • a preface defining the purpose of the FMP and main issues; • reservoir description including: <ul style="list-style-type: none"> ◦ geological setting including structure maps ◦ fault interpretation ◦ reservoir geology and petrophysics ◦ reservoir fluid properties and hydrocarbon contacts ◦ in-place volumetrics ◦ near field exploration, if any. • reservoir development including dynamic modelling, number, location(s) and type of wells as well as inflow control devices and estimates of well pressures and production; • monitoring and management of produced fluids and disposal plans for produced water; • drilling and completions; • surface facilities; • operations including pre-commissioning, commissioning, start-up operations, and decommissioning; and • project plan and management including an overview, resource planning and quality management. <p>Due to the specific “fit for purpose” nature of FMP’s, licensees are encouraged to have early discussion with DMP to streamline planning and preparation of the FMP.</p>

No change to Regulation 41 since consultation draft.

No.	Regulation 42 – Requirement to undertake well activity in accordance with approved field management plan	DMP Response
85	Add ...”well activity (including well construction).	As stated in the Guidelines provided for stakeholder consultation, “well activity” means an activity relating to a well that is carried out during the life of the well. Well construction is one of a number of these activities.
86	<p>Reg 42 creates an offence of undertaking an activity other than in accordance with “requirements of an approved field development plan”.</p> <p>Reg 44 deals with approving field development plans. Reg 44(5) states that “The Minister may approve the plan subject to conditions.” However, it is not all that clear that these conditions are “requirements of an approved field development plan”. Rather, one would think that the requirements would be set out in the plan itself, whereas conditions would be additional to the plan.</p> <p>If so, then you will need some kind of offence provision that applies to a breach of conditions of approval of a plan. Alternatively, one might amend the regs so that it is clear that a condition of approval and a requirement of a plan are both picked up by Reg 42.</p>	Refer to response for comment 31.

No change to Regulation 42 since consultation draft.

No.	Regulation 43 – Application for approval of field management plan	DMP Response
	No comments received	N/A

No change to Regulation 43 since consultation draft.

No.	Regulation 44 – Decision on field management plan	DMP Response
87	s.2(b) consider changing to “the date by when additional information must be submitted.”	The wording for this regulation is written to be consistent with equivalent regulation 13(3)(b) for decision on applications for WMPs.
88	s.4 Include timeframe.	The wording for this regulation is written to be consistent with equivalent regulation 13(7) for decision on applications for WMPs.
89	[Petroleum/mining industry representative body] notes that the use of statutory timeframes is not consistent throughout the proposed regulations. While r.13 and 21 provide 30 day timeframes for approvals, under r.44 a decision on a field development plan will be made ‘as soon as practicable.’ Indicative timeframes are an important means of providing industry with certainty, which facilitates project planning. Consideration of consistent timeframes is recommended, or alternatively an explanation as to why they are not relevant for some sections would be useful.	<p>Statutory timeframes can vary depending on the amount of time expected to assess and approve a particular application. As explained in the following weblink, http://www.dmp.wa.gov.au/7434.aspx “more complex (non-standard applications generally take more time to assess”.</p> <p>For this regulation, “as soon as practicable” is listed consistent with the equivalent provision in the OPGGS(RMA) Regs.</p> <p>A specific timeframe for approval of a FMP is not listed as this is a secondary approval process in petroleum production operations.</p> <p>The primary requirement for the recovery of petroleum is to obtain a petroleum production licence a prescribed in section 49 of the PGERA67. The timeframe for the approval of a production licence is 90 days as prescribed in the DMP standard approval timelines in the above link.</p>

No.	Regulation 44 – Decision on field management plan	DMP Response
90	<p>Reg 42 creates an offence of undertaking an activity other than in accordance with “requirements of an approved field development plan”.</p> <p>Reg 44 deals with approving field development plans. Reg 44(5) states that “The Minister may approve the plan subject to conditions.” However, it is not all that clear that these conditions are “requirements of an approved field development plan”. Rather, one would think that the requirements would be set out in the plan itself, whereas conditions would be additional to the plan.</p> <p>If so, then you will need some kind of offence provision that applies to a breach of conditions of approval of a plan. Alternatively, one might amend the regs so that it is clear that a condition of approval and a requirement of a plan are both picked up by Reg 42.</p>	Refer to response for comment 31.

No change to Regulation 44 since consultation draft.

No.	Regulation 45 – Notice of decision	DMP Response
	No comments received	N/A

Amendments made since consultation draft

Regulation 45 has been amended to clarify the information to be provided by the Minister in the written notice of the decision. This includes deleting “the terms of decision” previously in (a).

No.	Regulation 46 – Date on which field management plan takes effect	DMP Response
	No comments received	N/A

Amendments made since consultation draft

As a result of changes to regulation 45, regulation 46 has been amended to update the regulation reference for the date when the plan takes effect.

No.	Regulation 47 – Criteria for approval of field management plan	DMP Response
91	<p>As per comments for reg 16(c) “<i>the plan demonstrates that the applicant will manage the field — (i) in accordance with sound engineering principles, codes, standards and specifications; and</i></p> <p><i>(ii) in a manner that is consistent with good oil-field practice and compatible with optimum long-term recovery of the petroleum.</i>”</p> <p>The underlined sections are vague. Measurable provisions must be defined.</p>	<p>The PGER (RMA) Regulations require a petroleum licensee to submit a FMP to ensure that petroleum operations are carried out in accordance with good oil field practice, and are compatible with the optimum long-term recovery of petroleum.</p> <p>‘Good oil-field practice’ as a concept is defined in section 5 of the Act as meaning “all those things that are generally approved as good and safe in the carrying on of exploration for petroleum, or in the operations for the recovery of petroleum, as the case may be.”</p> <p>A key tenet of good oil field practice is resource management. Resource management ensures that the production of crude oil or raw gas is at a rate that can be sustained without adversely affecting the petroleum reservoir and avoiding unnecessary loss of associated resources. Petroleum should be produced at a maximum recovery rate, which is the maximum rate at which oil or gas can be produced without excessive decline or loss of reservoir energy.</p> <p>The move from prescriptive regulation to objective-based regulation places the emphasis on petroleum and geothermal titleholders to identify risks and effects, establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use.</p>
92	Reg 13(7): What happens if application rejected?	If an application is not approved under sub-regulation (2), the reasons are provided to the applicant in regulation 45 (b).

No change to Regulation 47 since consultation draft.

No.	Regulation 48 – Content of field management plan	DMP Response
93	s.2 Add – “or additional information specified by the Minister.”	It is not necessary to add the suggested wording to sub-regulation 48(2) as sub-regulation 44(2)(a) allows the Minister to request any further information to be included in the FMP.

No change to Regulation 48 since consultation draft.

No.	Regulation 49 – Application for approval of variation of field management plan	DMP Response
	No comments received	N/A

Amendments made since consultation draft

Regulation 49 amended to delete “variation and insert “revision”.

No.	Regulation 50 – Application for approval of variation required in certain circumstances	DMP Response
94	s1(b) Add “additional or different petroleum resources including the infrastructure or techniques to be used for extracting the resource (eg. a change from conventional extraction to hydraulic fracturing, or a change from vertical drilling to horizontal drilling”).	The definition of “petroleum” in the PGERA67 is sufficiently broad to cover the suggested “different petroleum resources” and, therefore no change is required. The listing of the infrastructure or techniques for extracting petroleum is covered in Schedule 3 in items 3, 4, 5 and 10.
95	definition “major change” too subjective – no measureable requirements.	This Regulation outlines the circumstances where a petroleum licensee must apply for a revision of a FMP. These include where there is a major change in relation to the recovery of petroleum from a field and lists four specific examples that constitute a major change. Of the four examples, two relate to changes to the approved FMP. These are changes to the: <ul style="list-style-type: none"> • development/management strategy of the field, and • the plan for development of additional petroleum pools The other two examples are ceasing production and introducing new methods for recovery. All of the 4 examples are clear and well-defined and not open to subjectivity.

Amendments made since consultation draft

Regulation 50 amended to delete “variation and insert “revision” in the title and also to delete sub-regulation (3). Previous sub-regulation (3)(a) deleted to remove the requirement for a revision of a FMP if there is a change to the petroleum licensee.

No.	Regulation 51 – Decision on application for approval of variation	DMP Response
96	s.2(b) consider changing to “the date by when additional information must be submitted.”	Refer to response for comment 87.

Amendments made since consultation draft

Regulation 51 has been amended to delete “variation” and “varied” and insert “revision” and “revised” where applicable.

No.	Regulation 52 – Notice of decision	DMP Response
97	Reg 52(b)(ii) – Should be open to multiple conditions, not ‘a condition’.	This regulation does not need to be amended as, under the section 10 of the <i>Interpretation Act 1984</i> , the singular includes the plural.
98	Reg 52(b)(ii) “a” – why limited to a single condition? Change to plural.	Refer to response for comment 97.

Amendments made since consultation draft

Regulation 52 has been amended to clarify the information to be provided by the Minister in the written notice of the decision. This includes deleting “the terms of decision” previously in (a). Regulation 52 has also to delete “variation” and insert “revision”.

No.	Regulation 53 – Date on which variation takes effect	DMP Response
	No comments received	N/A

Amendments made since consultation draft

As a result of changes to regulation 52, regulation 53 has been amended to update the regulation reference for the date when the plan takes effect.

No.	Regulation 54 – Variation required by Minister	DMP Response
99	Seems not sufficient information for the Minister to know when a variation may be required – too loose again.	Regulations 72, 73 and 74 describe reports that must be submitted to the Minister by titleholders about well activities in their title areas. DMP, on behalf of the Minister, monitors these reports which, along with pre-spud meetings, HAZID and HAZOP meetings, site inspections and audits, are provide information to assess compliance with approved management plans. Remedial action for non-compliance can readily be undertaken and this could include requesting a petroleum licensee to submit a revision of an approved FMP.

Amendments made since consultation draft

Regulation 54 amended to delete “variation and insert “revision”.

No.	Regulation 55 – Objection to requirement to revise approved field management plan	DMP Response
100	Reg 55(2): too open-ended as to period or basis on which it may be extended.	<p>This regulation allows a petroleum licensee who has received a notice under regulation 54 to make an objection in writing to the Minister within 21 days of receiving the notice, or if the Minister allows, a longer period. The objection should state one or more of the following and give reasons for the objection:</p> <ul style="list-style-type: none"> • the revision should not occur, or; • the revision should be on different terms, or; • the revision should take effect on a later date than proposed, or; • the date on which the licensee must submit a revision should be later than the proposed date. <p>The revision of the FDP does not have a termination date as, like the previous approved FDP, will remain in force until such time as there is a change to the petroleum recovery activities to be conducted. The basis for the decision will be provided to the petroleum licensee as per in regulation 56.</p>

Amendments made since consultation draft

Regulation 55 amended to delete “variation and insert “revision “and to delete “vary” and insert “revise”.

No.	Regulation 56 – Decision on objection	DMP Response
	No comments received	N/A

Amendments made since consultation draft

Regulation 56 has been amended to clarify the information to be provided by the Minister in the written notice of the decision. This includes deleting “the terms of decision” previously in (a).

No.	Regulation 57 – Requirement to comply with notice	DMP Response
	No comments received	N/A

No change to Regulation 57 since consultation draft.

No.	Division 5 – Recovery of petroleum before field management plan approved	DMP Response
101	Division 5 Recovery of petroleum before field development plan (FDP) approved – allowing operations for three months, which can be extended for up to nine months without an approved FDP is contrary to best practice, and how is a rate of recovery measured for consistency against an approved FDP if it does not exist?	<p>The purpose of this Division is to allow a petroleum licensee to conduct operations such as extended well tests or extended production tests.</p> <p>These tests are not intended to apply over a prolonged period of time, or to be used to undertake large scale commercial recovery of petroleum without an approved FMP.</p> <p>Clear understanding of the reservoir’s potential helps operators reduce risks. Extended well tests (EWTs) are used to evaluate productivity and characteristics of a reservoir including</p> <ul style="list-style-type: none"> • to estimate reservoir volume and • confirm reserves for field development and • confirm long-term reservoir deliverability. • determine optimal rate of recovery is also tested <p>From these tests, a petroleum licensee will develop the FMP for the field incorporating the information required in Schedule 3.</p>

No.	Regulation 58 – Application for approval to undertake recovery of petroleum without approved field management plan	DMP Response
102	These activities should not be allowed to proceed without the necessary approvals. Recommend deleting this regulation.	Regulation 58 stipulates that the Minister’s approval is required prior to any recovery of petroleum before a FMP is approved.
103	s.2(d) Add “or fluids (including water).”	<p>The regulation has been amended to:</p> <ul style="list-style-type: none"> • replace “hydrocarbons” with “petroleum” as this definition in the PGERA67 includes liquid (fluid) hydrocarbons, and • insert sub-regulation (e) to require “details of proposed disposal of produced formation material” to be provided as part of an application to recover petroleum without an approved FMP. The definition of “produced formation material” includes “natural fluids”.
104	[Petroleum/mining industry representative body] supports the inclusion of a mechanism to facilitate interim production under an approved WMP. This will assist with the difficulties in demonstrating the commerciality of shale and tight gas resources especially where long term well testing is required. However, the period of up to three months to demonstrate an ‘unconventional’ reservoir and obtain a production license is unlikely to be sufficient, particularly when taking into account the resolution of any native title negotiations.	<p>The 3 month approval period is to enable DMP to monitor and review the extended well tests or extended production tests as these tests are not intended to apply over a prolonged period of time, or to be used to undertake large scale commercial recovery of petroleum without an approved FMP.</p> <p>Regulation 61(1) allows for a petroleum license can conduct testing for an initial period of three months. Regulation 61(2) provides for this to be extended for a further three months provided the Minister is satisfied with the reasons given by the licensee. Regulation 61(3) allows the permitted period to be extended more than once</p>

No.	Regulation 58 – Application for approval to undertake recovery of petroleum without approved field management plan	DMP Response
105	The draft regulations prescribe for a maximum 3-month period that can be approved by the Minister. In the interests of ensuring flexibility, especially for production testing, [petroleum company] suggests that operators be allowed to apply for periods of longer than three months (on the basis that justification for the longer period is provided).	Refer to response for comment 104.
106	Recovery of petroleum before field development plans are approved must never take place. Applications and approvals must not be overstepped.	Refer to response for comment 102.
107	Reg 58: Why should there ever be activity prior to application and approval, with all usual plans etc filed?	Refer to response for comment 102.
108	Reg 58(2)(d): disposal or flaring – should flaring be allowed at any time? Why cannot all disposal be properly contained, measured etc?	<p>Flaring is the controlled burning of natural gas and a common practice in oil/gas exploration, production and processing operations. Because natural gas is valuable, companies would rather capture it rather than flare, however, there are several reasons why it may be necessary to flare gas during drilling, production or processing. These are:</p> <ul style="list-style-type: none"> • during well production testing after drilling is completed, • for safety and during emergencies and maintenance, • for managing gas during compression and processing, and • flaring at well sites to recover oil.

Amendments made since consultation draft

Regulation 58 has been amended to include new sub-regulation (2)(b) for the petroleum licensee to advise of any proposed disposal of produced formation material and to replace “hydrocarbons in (d) with “petroleum”.

No.	Regulation 59 – Decision on application	DMP Response
	No comments received	N/A

No change to Regulation 59 since consultation draft.

No.	Regulation 60 – Notice of decision on application	DMP Response
	No comments received	N/A

Amendments made since consultation draft

Regulation 60 has been amended to clarify the information to be provided by the Minister in the written notice of the decision. This includes deleting “the terms of decision” previously in (a).

No.	Regulation 61 – Permitted period	DMP Response
109	extensions, more than once – again no public insight.	Refer to response for comment 104.

Amendments made since consultation draft

As a result of changes to regulation 60, regulation 61 has been amended to update the regulation reference of the period when a petroleum licensee may undertake the recovery of petroleum without a FMP.

PART 7 – OTHER MATTERS RELATING TO PETROLEUM OR GEOTHERMAL ENERGY RECOVERY

No.	Regulation 62 – Requirement to obtain approval of rate of recovery	DMP Response
110	Specify how approval is to be obtained. Is it included in Environment Plan, field development plan/geothermal energy recovery plan, or other application?	Regulation 62 was included in the consultation draft for these Regulations because it was in the Commonwealth OPGGS(RMA) Regs. However, subsequent case studies in the application of this regulation have since shown that the requirements of regulation 62 are adequately covered by regulation 41. As a result, regulation 62 is not necessary and has been deleted.
111	<p>[Petroleum company] has significant concerns around being required to seek approval from the Minister for the rate of recovery. In [petroleum company's] view, the rate of recovery is tightly connected to project economics, gas markets and customer nominations under gas sales agreements and, from both a practical and commercial perspective, it would be unworkable to require hydrocarbons to be produced at a defined rate of recovery .</p> <p>[Petroleum company's] view is that Section 68 of the <i>Petroleum and Geothermal Energy Resources Act 1967</i> (which allows the Minister to “direct the licensee to take all necessary and practicable steps to increase or reduce the rate at which petroleum is being recovered in the licence area or from a petroleum pool in the licence area to such a rate as the Minister specifies”) provides adequate protection for the Government in relation to rates of recovery where the government holds concerns. [Petroleum company would recommend removal of the requirement in regulation 62</p>	Refer to response for comment 110.

Amendments made since consultation draft

Regulation 62 has been deleted as the requirements listed are adequately covered by regulation 41

No.	Regulation 63 – Application for approval of rate of recovery	DMP Response
112	This regulation as drafted does not currently outline a specified time or indeed required frequency for any applications to seek approval of the rate of recovery. [Petroleum company] would ask that further detail be provided.	Regulation 62 was included in the consultation draft for these Regulations because it was in the Commonwealth OPGGS(RMA) Regs. However, subsequent case studies in the application of this regulation has since shown that the information to be provided in regulation 63 is not necessary as the licensee is required to advise the maximum rate of recovery in accordance with item 7 of Schedule 3. As a result, regulation 63 has been deleted.
113	63 (2) items (b), (c) and (d). Application for Rate of Recovery. These details would be required in the Field Development Plan which needs to be approved before recovery can be undertaken (R 41). Appears to be a repeat of information already submitted. Does the application for a rate of recovery apply to regulation 58?	Refer to response for comment 112.

Amendments made since consultation draft

Regulation 63 has been deleted as the information required to be provided is not necessary as DMP requires the licensee to advise the maximum rate of recovery as per item 7 of Schedule 3.

No.	Regulation 62 – Requirement to notify Minister of significant event	DMP Response
		Following deletion of regulations 62 and 63, regulation 64 is now re-numbered to regulation 62.
114	s.1(d) add “or aquifer contamination” as an example to account for potential changes in water quality as well as quantity.	Significant events that could impact on aquifer contamination and water quality management are covered by the PGER(Env) Regs.
115	s.2 – Clarify whether this means it applies if the licensee is unaware of the event.	This regulation places additional but necessary responsibilities on the petroleum licensee in properly managing the recovery of petroleum from their licence area and the field in general. However, sub-regulation (2) only applies to significant events that the licensee is aware of.
116	Add – “an incident such as a spill, blow-out, leakage or overflow from ponds, fractures extending beyond the target area and/or intersecting existing wells, fractures, aquifers, surface water features, or groundwater dependent ecosystems.	The move from prescriptive regulation to objective-based regulation places the emphasis on the petroleum licensee to identify risks and effects, establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use . While the suggested additions may be suitable or appropriate in some cases, setting prescriptive, and often minimum, standards can lead to a minimum compliance rather than adopting flexible and dynamic practices to meet changing circumstances and striving for continuous improvement.
117	Add – “a seismic event.”	Refer to response for comment 116.
118	Add the implications of the event for the environment (including surface and groundwater resources), and for existing water users.	Significant events that could impact on environmental or water protection are covered by the PGER(Env) Regs.
119	Need to specify what action the Minister will take and when – this should include the options of immediate suspension of operations and cancelling of licences if unacceptable impacts are identified or the proponent has acted irresponsibly.	This regulation provides the notification requirements in relation to a significant event. Subsequent actions that the Minister may take as a result of the notification are in other provisions of the PGERA67 and its subsidiary regulations.
120	In regulation 64(2), the draft regulations propose that if a licensee “becomes aware” that a significant event has occurred, the licensee must give notice to the Minister. [Petroleum company] is interested to understand what level of “awareness” the Department considers will be required to meet this threshold. As you would be aware, the sub-surface environment is complex. Consequently, investigations will almost always be required to clarify the nature and extent of any event after initially “becoming aware” that an event has occurred. In the interests of ensuring that notifications to the Department are efficient, timely and meaningful, [petroleum company] is interested to understand how the threshold will operate practically. Further, [petroleum company] is concerned that the 12-hour timeframe for notifying the “significant event” would be difficult to meet in practice. [Petroleum company] would suggest that this is increased to 24 hours.	The term “significant event” is used in these Regulations to indicate an event or incident that is not within the direct control of the licensee. It is more likely than not to be an extraneous matter to the operations and actions of the licensee and therefore cannot be anticipated by the licensee. The term is also used so the licensee can use their judgment to determine which events are significant enough to be considered a significant event (as per the definition) and in some cases, when an event becomes significant then making the decision to notify the Minister. For example, in the event of aquifer pressure depletion, it may be recognised as happening and that it could potentially be significant. Observation may be necessary over a period of time before the conclusion is made that it is significant (as it is not necessarily unusual, in this event, for an initial drop in pressure to level off as the greater aquifer engages). A titleholder would be using their judgment as to when to report it, when it was concluded as having become significant. A significant event can be a trigger for a revision to a FMP, either initiated by the titleholder or required by the Minister, but will not trigger a revision in all cases. It is acknowledged ongoing consultation between the licensee and DMP is critical to ensure that FMPs are fit for purpose and particularly important in the early stages of their development. Concerns regarding the notification of significant events should be part of the consultation between licensees and DMP.

No.	Regulation 62 – Requirement to notify Minister of significant event	DMP Response
121	Again, onus is placed on the operator. This is highly irresponsible as the there is no guarantee the operator will not flex these conditions to fit their own interpretations. A responsible independent body must make such calls where no vested interests will be at play.	The responsibility for notification of a significant event in accordance with regulation 62 is with the petroleum licensee. This is consistent with the responsibility for recovery of petroleum in accordance with an approved FMP.
122	in these regulations all onus is constantly passed to the operator and it seems that the operator is trusted to be trustworthy.	Refer to response for comment 121.

Amendments made since consultation draft

Regulation 62 amended to include “underground formation” in place of “reservoir” in (1)(a). Regulation 62(3) has been amended to delete “delete “12 hours” and replace this with “2 hours”. This is to ensure a consistent timeframe for the reporting of emergencies with the equivalent petroleum environment regulations.

No.	Regulation 63 – Content of geothermal energy recovery development plan	DMP Response
		Following deletion of regulations 62 and 63, regulation 65 is now re-numbered to regulation 63.
	No comments received	N/A

No change to Regulation 63 since consultation draft.

PART 8 – DATA MANAGEMENT

No.	Part 8 – Data management	DMP Response
123	[Petroleum/mining industry representative body] is satisfied that there is a high level of consistency, where practicable, between State and Commonwealth data requirements.	Comment noted.

No.	Regulation 64 – Term used: operation	DMP Response
		Following deletion of regulations 62 and 63, regulation 66 is now re-numbered to regulation 64.
	No comments received	N/A

No change to Regulation 64 since consultation draft.

No.	Division 2 – Requirements for keeping information	DMP Response
124	Division 2 Requirements for keeping information – Failure to comply with the requirements of this regulation carries a penalty of \$4000, which seems extremely low and does not match with the importance that must be placed on instrument holders to maintain information about operations in title areas.	<p>The maximum allowable penalty in Regulations under the PGERA67 is \$10,000.</p> <p>The data management penalties were reviewed as a whole with a judgement made on the level of the offence. The most serious offences were given the maximum penalty of \$10,000, less serious offences a penalty of \$7,000 and the lowest penalties of \$4,000. Penalties for breaches of regulations in Division 2 were assessed as being at the lower level of the scale and worth a penalty of \$4,000.</p> <p>DMP is committed to continuous improvement and this includes the suitability of penalties and offences contained in Departmental legislation.</p>

No.	Division 2 – Requirements for keeping information	DMP Response
		In 2013, the Department engaged Marsden Jacob Associates in October 2013 to prepare a resource paper to support the statutory penalties review by examining best practice penalties used in other jurisdictions. This paper presented a number of key findings and in December 2013 was circulated for stakeholder comment with the outcome that DMP will apply penalties under legislation which are proportionate to the offence and in a consistent manner and also introduce corporate level penalties. As with all penalties in the PGER(RMA) Regs the ultimate overriding penalty for a breach will be the closure of the petroleum or geothermal activity.

No.	Regulation 65 – Requirement to securely retain information	DMP Response
		Following deletion of regulations 62 and 63, regulation 67 is now re-numbered to regulation 65.
125	like all fines, this seems ludicrously minimal.	Refer to response for comment 124.

No change to Regulation 65 since consultation draft.

No.	Regulation 66 – Requirement to securely retain information so that retrieval is reasonably practicable	DMP Response
		Following deletion of regulations 62 and 63, regulation 68 is now re-numbered to regulation 66.
126	It is suggested that DMP consider whether Division 2 should focus on the furnishing of material rather than its storage. For example, a requirement for an instrument holder to produce reports on request would require the operator to demonstrate a record management capability. This would be consistent with an objective-based approach.	“Comment noted.”
127	Should prescribe time period for retention of records.	The timeframes for retention of information can vary depending on the information and when it is required to be submitted. As a result, retention timeframes do not need to be listed for those regulations that prescribe the requirement to retain information as they are set by their submission times. For example, the submission times for cores, cuttings and samples are provided in the table in regulation 80(1). These times set the timeframe for the requirement to retain core, cuttings and samples in regulation 71.

No change to Regulation 66 since consultation draft.

No.	Regulation 67 – Requirement to securely retain core, cutting or sample	DMP Response
		Following deletion of regulations 62 and 63, regulation 69 is now re-numbered to regulation 67.
128	Should prescribe time period for retention of records.	See response for comment 127.

No change to Regulation 67 since consultation draft.

No.	Regulation 68 – Requirement to retain core, cutting or sample in Australia	DMP Response
		Following deletion of regulations 62 and 63, regulation 70 is now re-numbered to regulation 68.
	No comments received	N/A

No change to Regulation 68 since consultation draft.

No.	Regulation 69 – Requirement to return core, cutting or sample to Australia	DMP Response
		Following deletion of regulations 62 and 63, regulation 71 is now re-numbered to regulation 69.
129	Why 12 months? Surely if required, core, cuttings or samples should be returned in a significantly shorter time frame.	Core, cuttings and samples are only sent overseas for analysis where complex testing is required and there are no testing facilities available in Australia. The 12 month timeframe includes the time take to undertake the analysis and some tests, such as palynology tests, do take this amount of time to complete.

No change to Regulation 69 since consultation draft.

No.	Regulation 70 – Requirement to provide report about overseas analysis of core, cutting or sample	DMP Response
		Following deletion of regulations 62 and 63, regulation 72 is now re-numbered to regulation 70.
130	(b)(i) Should 12 month timeframe be 3 or 6 months to allow information to be included in final activity report?	A 12 month timeframe is required for overseas analysis of core, cuttings and samples as explained in the response for comment 129. The report that is required to be provided in this regulation is specifically for the analysis of the particular core, cutting or sample and not connected with a final well activity report which is to provide data and information following completion of the well activity.
131	Why 12 months? Surely if required, core, cuttings or samples should be returned in a significantly shorter timeframe.	Refer to response for comment 130.

No change to Regulation 70 since consultation draft.

No.	Regulation 71 – Requirement to retain core, cutting or sample so that retrieval is reasonably practicable	DMP Response
		Following deletion of regulations 62 and 63, regulation 73 is now re-numbered to regulation 71.
	No comments received	N/A

No change to Regulation 71 since consultation draft.

No.	Regulation 72 – Daily well activity report	DMP Response
		Following deletion of regulations 62 and 63, regulation 74 is now re-numbered to regulation 72.
132	In order to transition to daily reporting as stipulated under this regulation, there is little guidance as to how the practical implementation and interaction between regulator and operator will occur or how an Operator is to carry out this additional administrative burden. [Petroleum company] would ask that further dialogue occurs with operators prior to, and during transition to, the new reporting framework.	DMP will provide information in the Guidelines in the transition from: <ul style="list-style-type: none"> a) daily drilling and workover reports, currently required under clause 536 of the Onshore Petroleum Exploration and Production Requirements 1991, and b) daily drilling, re-entry and workover reports, under clause 535 of the Onshore Geothermal Exploration and Production Requirements 2009, to daily well activity reports required under regulation 72.
133	There could be the perception that the requirement for daily submission of daily activity reports to DMP (or other regulators) implies that the regulator is responsible for their review, interpretation and possibly for identifying if there is a potential problem with well integrity. Is this the intention of this regulation and is it possible for the regulators to carry out this function for all projects in a timely manner to prevent serious incidents? The regulations do not make any statement for requirement for comment by the operator on the daily reports on trends or interpretations indicating that a system could be moving out of control. It is recommended that evidence of such interpretation be submitted to DMP on a regular basis (say weekly rather than daily), and that daily the activity reports be submitted as soon as possible when there is significant deviation from the day before (with reference to the weekly/monthly trends) or evidence of a negative impact.	The submission of daily well activity reports is a requirement that has been in place for many years by way of the Petroleum and Geothermal Schedules of Exploration and Production Requirements served on titleholders on the grant of a title. The daily well activity report in the Regulations is a continuation of the requirement for instrument holders to provide information on the well activities conducted in their instrument area. The description of what is to be covered in the report is covered in Schedule 5. This report, along with other reports for different times and stages of the well activity, are audited and used by DMP to ensure compliance with management plans and to assess a well program for well Integrity and in the mitigation of subsurface hazards. If an emergency situation arises during a well activity, the titleholder is required to inform the Minister (DMP) within 2 hours of becoming aware of the emergency in accordance with regulation 10(2)(c).

Amendments made since consultation draft

Regulation 72 amended to change the name of the report to “daily well activity report”.

No.	Regulation 73 – Final well activity report and data	DMP Response
		Following deletion of regulations 62 and 63, regulation 75 is now re-numbered to “regulation 73.
134	[Petroleum company] notes that although termed “final activity report”, some activities previously required for reporting have now been transferred to the well completion report. As such, naming this report “final activity report” is perhaps unintentionally misleading, and may cause confusion as it is no longer the final report in the process. It is [Petroleum company’s] view that consideration should be given to renaming this report.	This regulation has been renamed “final well activity report” as the information to be provided is the final report for non-drilling well activities (eg:workovers or interventions). The final activity report for drilling activities is a well completion report.

Amendments made since consultation draft

Regulation 73 has been amended to change the name of the report to “final well activity report” and the data to “final well activity data”. Sub-regulation (2)(b) also amended from “drilling operation” to “drilling activity”.

No.	Regulation 74 – Well completion report and data	DMP Response
		Following deletion of regulations 62 and 63, regulation 76 is now re-numbered to regulation 74.
135	s.2(i) 12 months appears too long? Define rig release date – is this when rig is on-site and commences drilling?	The rig release date is when the rig is released from its contract and demobilises. The extension of the timeframe for submission of the well completion report and data from 6 months to 12 months is based on actual experience where it has been found that it is difficult for instrument holder to submit all the data, especially core analyses, within 6 months.

No change to Regulation 74 since consultation draft.

No.	Regulation 75 – Weekly survey report	DMP Response
		Following deletion of regulations 62 and 63, regulation 77 is now re-numbered to regulation 75.
136	s.2(b) specify timeframe	This regulation has been amended to include a timeframe for submission of a weekly survey report of “24 hours after the end of each week of survey”.

Amendments made since consultation draft

Regulation 75 has been amended to include a timeframe of 24 hours for the instrument holder to submit a weekly survey report.

No.	Regulation 76 – Survey acquisition report and data	DMP Response
		Following deletion of regulations 62 and 63, regulation 78 is now re-numbered to regulation 76.
	No comments received	N/A

Amendments made since consultation draft

The timeframes in this regulation have been amended to align them with the timeframes in the equivalent Commonwealth OPGGS (RMA) Regs which changed in 2013. That is, sub-regulations (2) (b) (i), (ii), (iii) and (iv) have been deleted and replaced with:

- (i) 18 months after the day on which the acquisition of the data is completed; or
- (ii) if the Minister authorises the instrument holder to give the report and data within another period – the other period.

No.	Regulation 77 – Survey processing report and data	DMP Response
		Following deletion of regulations 62 and 63, regulation 79 is now re-numbered to regulation 77.
137	The timeframe for providing reports to the Department are, in [petroleum company's] view, onerous. The timeframe for providing a seismic survey report (under Regulation 79) may be difficult to meet. [Petroleum company] suggests that it may be useful to allow operators to apply for an extension for up to six months to provide the report.	The timeframes in this regulation have been amended to align them with the timeframes in the equivalent Commonwealth OPGGS (RMA) Regs which changed in 2013. That is, sub-regulations (2) (b) (i), (ii), (iii) and (iv) have been deleted and replaced with: <ul style="list-style-type: none"> (i) 24 months after the day on which the acquisition of the data is completed; or (ii) if the Minister authorises the instrument holder to give the report and data within another period – the other period.

No.	Regulation 77 – Survey processing report and data	DMP Response
		Also, sub-regulations (3) (b) (i), (ii), (iii) and (iv) have been deleted and replaced with: (i) 24 months after the day on which the reprocessing of the data is completed; or (ii) if the Minister authorises the instrument holder to give the report and data within another period – the other period.

Amendments made since consultation draft

As detailed in the response for comment 137, the timeframes in this regulation have been amended to align them with the timeframes in the equivalent Commonwealth OPGGS (RMA) Regs which changed in 2013.

No.	Regulation 78 – Survey interpretation report and data	DMP Response
		Following deletion of regulations 62 and 63, regulation 80. is now re-numbered to regulation 78.
	No comments received	N/A

Amendments made since consultation draft

The timeframes in this regulation have been amended to align them with the timeframes in the equivalent Commonwealth OPGGS (RMA) Regs which changed in 2013. That is, sub-regulations (2) (b) (i), (ii) and (iii) have been deleted and replaced with:

- (i) 30 months after the day on which the acquisition of the data is completed; or
- (ii) if the Minister authorises the instrument holder to give the report and data within another period – the other period.

Also sub-regulations (3) (b) (i), (ii), (iii) and (iv) have been deleted and replaced with:

- (i) 30 months after the day on which the reprocessing of the data is completed; or
- (ii) if the Minister authorises the instrument holder to give the report and data within another period – the other period.

No.	Regulation 79 – Monthly production report from licensee	DMP Response
		Following deletion of regulations 62 and 63, regulation 81 is now re-numbered to regulation 79.
138	The timeframes for providing reports to the Department are, in [petroleum company's] view, onerous. In terms of the 15 day timeframe for providing the monthly production report (under Regulation 81) [petroleum company] suggests that a timeframe of 30 days might be more reasonable under the circumstances.	The 15 day timeframe is consistent with the current requirements under both the Onshore Petroleum Schedule and the Geothermal Schedule which requires a licensee to submit a monthly production report "not later than the 15th day of each month....relating to the last preceding calendar month". DMP has followed the equivalent Commonwealth regulation 7.19 to require the submission of the monthly production report "15 days after the last day of the month to which the report relates".

No change to Regulation 79 since consultation draft.

No.	Regulation 80 – Requirement to give core, cutting or sample	DMP Response
		Following deletion of regulations 62 and 63, regulation 82 is now re-numbered to regulation 80.
139	<p>Table (include number for tables)</p> <ul style="list-style-type: none"> • item 3 – specify time limit (1 or 2 months?) • items 2 and 3 appear to be the same? 	In item 3 of the table, the quantity requirement has been changed from “2/3 of the core” to “Remainder of the core” to recognise that, occasionally, analysis of the core may result in there being less than two thirds of the core remaining. The timeframe for item 3 is to remain as “as soon as practicable” to keep consistency with the timeframe in the equivalent Commonwealth OPGGS(RMA) Regulation.
140	With reference to items 4 and 5 in the attached table, the period for giving a core, cutting or sample is “12 months after the rig release date”. This timeframe is inconsistent with that stipulated by NOPTA, who currently stipulate a period of 18 months after the rig release date as its mandated timeframe. It is [Petroleum company’s] view that this issue should be tabled at a future meeting of the Petroleum Data Consultation Group for discussion and resolution, to ensure harmonisation of this regulation across State and Commonwealth jurisdictions.	<p>The timeframes in items 4 and 5 in the table for this regulation (as shown consultancy draft) have been amended from “12 months” to “18 months”. This is to align them with the timeframes in the equivalent Commonwealth OPGGS (RMA) Regulation 7.20 which changed in 2013. These items have also been re-numbered to items 6 and 7.</p> <p>It should be note that other changes to Commonwealth regulation 7.20 have also been included. That is, the requirement to provide “gaseous hydrocarbon samples” has been included as new item 4 and “Fluid hydrocarbon samples” added as new item 5.</p>

Amendments made since consultation draft

As detailed in the response for comment 139 and 140, the timeframes in this regulation have been amended to align them with the timeframes in the equivalent Commonwealth OPGGS (RMA) Regs which changed in 2013. Sub-regulation (1)(a) amended from “drilling operation” to “drilling activity”.

PART 9 – RELEASE OF TECHNICAL INFORMATION ABOUT PETROLEUM AND GEOTHERMAL ENERGY RESOURCES

No.	Part 9 – Release of technical information about petroleum and geothermal energy resources	DMP Response
141	<p>I attach for your information Question Without Notice 306, asked in the Legislative Council on Tuesday 1 April, 2014 by the Hon Robin Chapple MLC to the Minister representing the Minister for Mines and Petroleum. I refer to the answer to question (2): ‘Commitments within environment plans are confidential under the provisions of the <i>Petroleum and Geothermal Energy Resources Act 1967</i>. There was no action taken against Buru for the April 2013 incident, due to this incident being considered insignificant and causing no environmental damage,’ which serves to highlight that there is no transparency within the regulatory framework and does not meet global best practice. This is also contrary to the recommendations made by the Independent Review Board that the regulatory processes should be strengthened and that legal enforceability need to be improved through developing new environmental and resource management regulations, and for key legislative amendments to:</p> <ul style="list-style-type: none"> • strengthen enforcements provisions for regulators; • mandate full disclosure of chemicals; and • mandate public release for approved Environment Management Plans. <p>The draft regulations do not address this major concern and I strongly recommend that all Environmental Management Plans are exempt and must not under any circumstances be considered permanently confidential information under:</p>	<p>Titleholders are currently required to comply with resource management and administration requirements as part of conditions imposed on the grant of a valid title application and also in the Schedule of Exploration and Production Requirements issued by ministerial direction under section 95 of the PGERA 67 on the granting of a petroleum or geothermal title.</p> <p>Prescribing resource management and administration requirements in regulations will provide consistency, transparency and enable enforceability.</p> <p>Provisions for the full disclosure of chemicals for onshore petroleum and geothermal activities are contained in the PGER(Env) Regs.</p> <p>The PGER(Env) Regs currently provide for the release of a detailed technical summary of the approved EP and these are published on the DMP website. Public release of the full EP is not possible under the current data release provisions in the PGERA67.</p> <p>DMP is moving to broaden the information that can be released under the PGERA 67. It is anticipated that these amendments will be progressed in 2015.</p>

No.	Part 9 – Release of technical information about petroleum and geothermal energy resources	DMP Response
	Part 9 – Release of technical information about petroleum and geothermal energy resources <ul style="list-style-type: none"> • Division 2 Classification of documentary information; and • Division 3 Release of documentary information. 	
142	[Petroleum/mining industry representative body] is satisfied that there is a high level of consistency, where practicable, between State and Commonwealth data requirements.	Comment noted

No.	Regulation 81 – Terms used	DMP Response
		Following deletion of regulations 62 and 63, regulation 83 is now re-numbered to regulation 81.
143	Clarify whether Part 9 relates to the public release of technical information.	<p>The Regulations in Part 9 are about the conditions under which technical information about petroleum can be released. The overall aim is to protect confidential information appropriately, while allowing for its use to exploit and manage the resource. Although these Regulations allow that information be released under certain conditions, and after a particular time, it does not necessarily mean that it will automatically be made publicly available or released by the Minister on that date. In most cases a process of requesting and obtaining approval to view or utilise the information is required, and mostly it is only released to the applicant.</p> <p>DMP is moving to broaden the information that can be released under the PGERA 67. It is anticipated that these amendments will be progressed in 2015.</p>
144	Repeat meanings of terms used in the Act within these regulations.	Under WA Government drafting guidelines, definitions of terms used in primary legislation (section 5 of the PGERA67) do not need to be reiterated in the subsidiary legislation.
145	Open information about a well should include: <ul style="list-style-type: none"> • whether a well is to be hydraulically fractured – in purpose of the well under (f) • the orientation of the well (e.g. vertical or horizontal) • the depth (for vertical component) and length (for horizontal component) of the well • the completion details of the well (e.g. materials used, casing and grouting depths, etc.) 	<p>The definition of the term “open information about a well” has been closely modelled on the equivalent term in the Commonwealth OPGGS(RMA) Regs to provide consistency across State and Commonwealth jurisdictions.</p> <p>Hydraulic fracturing does not need to be listed as an example of the purpose of a well in in (f). The supporting Guidelines provided for stakeholder consultation list hydraulic fracturing as one of many examples of activities covered by the term “well activity”.</p> <p>The suggested changes relating to orientation, depth and length are considered to be covered in the definition of the term“ open information about a well”.</p> <p>Completion details for a well, such as the examples listed, are not included in the list of open information about a well as this type of information is “basic information” and, in accordance with regulation 91(5) is releasable 2 years after the day on which, in the opinion of the Minister, the well activity was substantially completed.</p>

Amendments made since consultation draft

Regulation 81 has minor amendments to update regulation numbers and to delete “abandoned” and replace it with “decommissioned”.

No.	Regulation 82 – Meaning of excluded information	DMP Response
		Following deletion of regulations 62 and 63, regulation 84 is now re-numbered to regulation 82.
146	“Excluded information” terms are too restrictive. They do nothing to encourage transparency which has proven to be a contentious issue with this industry globally. The more transparent, the better. The public must be aware of what is happening in their state and what risks their health and environment is placed under.	<p>The definition of the term “excluded information” has been closely modelled on the equivalent term in the Commonwealth OPGGS(RMA) Regs to provide consistency across State and Commonwealth jurisdictions.</p> <p>One of the objects of these Regulations is to efficiently manage data confidentiality and the disclosure of data on completion of the relevant confidentiality period.</p> <p>Confidentiality regulations exist to protect trade secrets and information that could affect an instrument holder’s business, commercial or financial affairs.</p> <p>The PGER(Env) Regs currently provide for the release of a detailed technical summary of the approved EP and these are published on the DMP website. Public release of the full EP is not possible under the current data release provisions in the PGERA67.</p> <p>DMP is moving to broaden the information that can be released under the PGERA 67. It is anticipated that these amendments will be progressed in 2015.</p>
147	The information defined as “excluded information” is overly/unnecessarily restrictive, is highly relevant and should be made available and be open to public access!	Refer to response for comment 146.

Amendments made since consultation draft

The list of the type of information that is “excluded information” has been amended as follows:

- In 3(i) “Parts 2 and 3” have been deleted and replaced with “Parts 4 and 5”. This was due to Discovery Assessment Report being incorrectly referenced as Part 2 instead of Part 4 and Annual Assessment Reports incorrectly referenced as Part 3 instead of Part 5.
- “a geothermal energy recovery development plan submitted under section 62A of the Act” has been included at (3)(n).
- “an application for approval of a variation of an approved development plan submitted under section 62B of the Act” is included at (3)(o).

No.	Regulation 83 – Meaning of permanently confidential information	DMP Response
		Following deletion of regulations 62 and 63, regulation 85 is now re-numbered to regulation 83.
148	“Excluded information” terms are too restrictive. They do nothing to encourage transparency which has proven to be a contentious issue with this industry globally. The more transparent, the better. The public must be aware of what is happening in their state and what risks their health and environment is placed under.	Refer to response for comment 146.
149	The information defined as “excluded information” is overly/unnecessarily restrictive, is highly relevant and should be made available and be open to public access!	Refer to response for comment 146.
150	With respect to DMP’s commitment for full chemical disclosure on hydraulic fracturing fluids, it appears that there is currently sufficient ambiguity in these definitions to allow a legal challenge to prevent it. For example, if the company deemed particular chemicals to fall into <i>Regulation 85 Meaning of permanently confidential</i> information on the basis of being “trade secrets” or the information disclosure could “adversely affect the person’s business, commercial or financial affairs” a chemical may not be disclosed. This does not support transparency.	<p>Provisions for the full disclosure of chemicals used for onshore petroleum and geothermal activities are contained in the PGER(Env) Regs. Chemical Disclosure Guidelines has been prepared and are available at http://www.dmp.wa.gov.au/documents/ENV-PEB-178.pdf.</p> <p>DMP updated its public disclosure rules for chemicals being used down-hole in petroleum activities in August 2013. Chemical disclosure is a requirement of the PGER(Env) Regs gazetted in August 2012.</p>

No.	Regulation 83 – Meaning of permanently confidential information	DMP Response
	<p>Recommendation: Seek further legal advice and ensure there is communication with the Environment and Safety branches of DMP regarding this regulation and how it may restrict effective function of the respective pieces of legislation. It is recommended an exclusion clause be drawn into this regulation to allow full disclosure of all chemicals used, in line with DMP policy and the Chemical Disclosure Guideline.</p> <p>“Regulation 17 Content of well management plan (p14) ... must include information listed in Schedule 1.</p> <p>Schedule 1 – Well management plan Item 8. <i>Details of chemicals and other substances that may be used for purposes of drilling or hydraulic fracture (p 71)</i></p> <p>Regulation 84 Meaning of excluded information (3) Information contained in the following documents is excluded information.</p> <p>(l) a well management plan submitted under regulation 12;</p> <p>Division 2. Classification of documentary information Regulation 85 Meaning of permanently confidential information</p> <p>(1) This regulation sets out the 4 situations in which documentary information is permanently confidential information.</p> <p>(2) Despite anything else in this Division, excluded information is permanently confidential information.”</p> <p>This regulation could allow for legal challenge against full chemical disclosure. It may also create a loophole for potentially toxic chemicals to be excluded from full disclosure. The [State Government agency] supports the need for full disclosure of chemicals used in hydraulic fracture solutions and flow back solutions that may impact drinking water, by operations working near or with potential to contaminate PDWSAs. The Minister has full provision to reject a WMP if toxic chemicals are proposed that could negatively impact PDWSAs and affect public health, yet this is not considered to be transparent regulation by the [State Government agency] if chemical disclosure is voluntary and potentially selective. This obvious lack of transparency has the potential to create a negative public relations issue if oppositional stakeholders identify that some chemicals used in hydraulic fracture and drilling may be deemed to be permanently confidential by the operating company.</p>	<p>The chemical disclosure guidelines were initially released in 2012 in conjunction with the regulations to ensure transparency in relation to chemicals being used in petroleum activities, whether offshore or onshore.</p> <p>The guidelines were updated in August 2013 following an extended period of stakeholder feedback and consultation.</p> <p>Chemical disclosure has moved to a risk-based approach, which means that more information has to be provided to DMP about the chemicals being used. Petroleum operators may also be required to undertake a specific chemical risk assessment for any proposed activities where potential impacts or risks to human health, the environment or water resources are identified.</p> <p>DMP uses the chemical disclosure and risk assessment in its regulatory environmental approvals process to help determine the acceptability of a proposed petroleum activity. This may include obtaining advice from other agencies on a case-by-case basis, such as the Department of Water and Department of Health. It may also include referring the proposal to the Environmental Protection Authority where it is deemed to have significant environmental impacts or risks. The updates include:</p> <ul style="list-style-type: none"> • adopting ‘systems based’ chemical disclosure which means that disclosure is provided for each stage of a petroleum activity, ie. drilling, cementing, well maintenance and fracking stages (where appropriate); • providing information about ecotoxicity (in relation to aquatic plants and animals) and rates of biodegradation; • providing a chemical disclosure template for operators to use in a consistent manner; and • releasing a Petroleum Fact Sheet on DMP’s website about chemicals in the petroleum industry. <p>It should be noted that ‘systems-based’ disclosure does not make any provision for exempting proprietary chemicals from being publicly disclosed.</p> <p>The Operator must inform the supplier or manufacturer that all chemical information disclosed to DMP will be made publicly available. If chemical disclosure information is not forthcoming from a supplier or manufacturer, then the Operator should consider selecting alternative products and/or suppliers that will be able to meet chemical disclosure requirements.</p>

No change to Regulation 83 since consultation draft.

No.	Regulation 84 – Meaning of interpretative information	DMP Response
		Following deletion of regulations 62 and 63, regulation 86 is now re-numbered to regulation 84.
No comments received		N/A

No change to Regulation 84 since consultation draft.

No.	Regulation 85 – Classification dispute notice	DMP Response
		Following deletion of regulations 62 and 63, regulation 87 is now re-numbered to regulation 85.
	No comments received	N/A

No change to Regulation 85 since consultation draft.

No.	Regulation 86 – Making an objection	DMP Response
		Following deletion of regulations 62 and 63, regulation 88 is now re-numbered to regulation 86.
	No comments received	N/A

No change to Regulation 86 since consultation draft.

No.	Regulation 87 – Consideration of objection	DMP Response
		Following deletion of regulations 62 and 63, regulation 89 is now re-numbered to regulation 87.
	No comments received	N/A

No change to Regulation 87 since consultation draft.

No.	Regulation 88 – When objection ceases to be in force	DMP Response
		Following deletion of regulations 62 and 63, regulation 90 is now re-numbered to regulation 88.
	No comments received	N/A

No change to Regulation 88 since consultation draft.

No.	Division 3 – Release of documentary information	DMP Response
151	The release of a well completion report, including interpretive drilling results, two years after the completion of drilling is inconsistent with the provisions of the RMA regulations that other interpretive data will not be released until five years after completion.	Comment acknowledged. Regulation 92 has been amended to reflect that final well activity data, well completion data and information from final well activity reports and well completion reports are not included and are releasable after 2 years.

No.	Regulation 89 – Purpose of Division	DMP Response
		Following deletion of regulations 62 and 63, regulation 91 is now re-numbered to regulation 89.
152	There is no provision in the RMAA Regulations to make documentary information available to a Minister of another government department, jurisdiction, or delegates of other jurisdictions. Subclause (b) raises questions regarding the confidentiality of passing information onto other Ministers (or delegates of Ministers) within the WA Government and other jurisdictions. For example, do Regulations 84 and 85 (in consultation draft) imply that permanently	New release of information sections will commence in the PGERA67 when the PGER(RMA) Regs come into effect. Sections 150A to 150G inclusive in Part IVA contain provisions for making information available to another Minister or a Minister in another jurisdiction. In view of this, similar provisions do not need to be replicated in these Regulations.

No.	Regulation 89 – Purpose of Division	DMP Response
	confidential information (well management plan) will not be made available to other Government Departments for detailed assessment? It is recommended that an appropriate clause be included in this section to allow for referral to other agencies of potentially sensitive information that may be considered to be “trade secret” or otherwise “permanently confidential” to the company.	

No change to Regulation 89 since consultation draft.

No.	Regulation 90 – Release of open information about survey or well	DMP Response
		Following deletion of regulations 62 and 63, regulation 92 is now re-numbered to regulation 90.
	No comments received	N/A

No change to Regulation 90 since consultation draft.

No.	Regulation 91 – Release of basic disclosable information	DMP Response
		Following deletion of regulations 62 and 63, regulation 93 is now re-numbered to regulation 91.
153	[Petroleum company] would prefer the definition pertaining to “substantial completion of activity” be the “final rig release date”. This definition would better take into account any operational plans or issues that may arise causing operators to re-visit or re-enter the well bore.	The term “substantial completion of activity” at item 1 in the table in regulation 91(5) will be retained to take into account that not all well activities will require a rig and to maintain consistency with the equivalent regulation in the Commonwealth OPGGS(RMA) Regs.

No change to Regulation 91 since consultation draft.

No.	Regulation 92 – Release of interpretative disclosable information	DMP Response
		Following deletion of regulations 62 and 63, regulation 94 is now re-numbered to regulation 92.
	No comments received	N/A

Amendments made since consultation draft

Regulation 92 amended to include a definition of new term “well information” added. New sub-regulations (3) and (4) added to prescribe that the release of well information is 2 years after operation was substantially completed and that other information is 5 years after operation was substantially completed.

No.	Regulation 93 – Release of documentary information: prior availability or consent	DMP Response
		Following deletion of regulations 62 and 63, regulation 95 is now re-numbered to regulation 93.
	No comments received	N/A

No change to Regulation 93 since consultation draft.

No.	Regulation 94 – Fees for documentary information	DMP Response
		New regulation for fee provisions transferred from PGER Regs 1987.

Amendments made since consultation draft

New regulation added.

No.	Regulation 95 – Purpose of Division	DMP Response
		Following deletion of regulations 62 and 63, regulation 96 is now re-numbered to regulation 95.
	No comments received	N/A

No change to Regulation 95 since consultation draft.

No.	Regulation 96 – Release of mining samples after relevant day	DMP Response
		Following deletion of regulations 62 and 63, regulation 97 is now re-numbered to regulation 96.
	No comments received	N/A

No change to Regulation 96 since consultation draft.

No.	Regulation 97 – Release of mining sample: prior availability or consent	DMP Response
		Following deletion of regulations 62 and 63, regulation 98 is now re-numbered to regulation 97.
	No comments received	N/A

Amendments made since consultation draft

Regulation 97 amended to change the name of the regulation

No.	Regulation 98 – Fees for inspection of mining sample	DMP Response
		New regulation for fee provisions transferred from PGER Regs 1987.

Amendments made since consultation draft

New regulation added.

PART 10 – TRANSITIONAL PROVISIONS

No.	Regulation 99 – Terms used	DMP Response
		New regulation to define key terms used in the transitional provisions.

Amendments made since consultation draft

New regulation added.

No.	Regulation 100 – Existing surveys	DMP Response
		New regulation to provide that existing surveys approved and undertaken prior to the commencement of these Regulations, do not need to comply with the requirements of Part 2 of these Regulations.

Amendments made since consultation draft

New regulation added.

No.	Regulation 101 – Existing well activities	DMP Response
		New regulation to provide that titleholders undertaking well activities approved prior to the commencement of these Regulations, will have 12 months from the commencement of these Regulations to submit an application for approval of a WMP under regulation 12(1).

Amendments made since consultation draft

New regulation added.

No.	Regulation 102 – Existing recovery operations	DMP Response
		New regulation to provide that petroleum licensees undertaking petroleum recovery operations approved prior to the commencement of these Regulations, will have 12 months from the commencement of these Regulations to submit an application for approval of a FMP under regulation 43(1) or an application for approval to undertake recovery of petroleum without a FMP under regulation 58(1).

Amendments made since consultation draft

New regulation added.

SCHEDULES

No.	Schedule 1 – Well management plan	DMP Response
154	The guideline for these regulations states that the well management plan (WMP) will contain all the risk management and mitigation information (and that this should be separate) plus the detailed first activity program, but this is not made clear in the regulations.	Risk management and mitigation information is contained in Item 7 of Schedule 1 which requires an explanation of how the titleholder will identify, monitor, mitigate and otherwise deal with — (a) a well integrity hazard; and (b) a significant increase in an existing risk for the well, including the possibility of continuing a well activity for the purpose of dealing with the well integrity hazard or the risk.
155	The guideline also states that the WMP should be appropriate for the nature and scale of the activity or proposed use and that the drilling impacts and risks of the activity will be as low as reasonably practicable. These requirements need to be included in the RMA regulations.	Both these aspects are contained in the Regulations. Regulation 16(1)(b) states that one of the criteria for approval of a WMP is that it is appropriate for the nature and scale of each well activity. Under part (c) of the definition of “integrity”, the well bore must only be subject to risks that have been reduced to a level that is as low as reasonably practicable.

No.	Schedule 1 – Well management plan	DMP Response
156	The guideline includes several requirements that should preferably be covered in the regulations.	It is not possible to respond to this comment as specific details have not been provided.
157	The guideline mentions that changes to location or operational details of an approved WMP that result in minor additional or modified risks may be processed by written notification. Clarification is sought on the criteria that will be used to determine that a risk is minor.	<p>The Guidelines will be updated to provide further information and will also include a matrix that sets out the how a WMP is to be amended following well activity changes.</p> <p>Under current requirements, a full WMP will be required for a new drilling activity. Well activities after this will be appended to the WMP either by way of:</p> <ul style="list-style-type: none"> • written notification, or • a Management of Change (MOC) document • a revision of a WMP <p>This will be dependent on whether the change in well activity is covered in the approved WMP, and an assessment of the additional or modified risk.</p>
158	<p>The well management plan should include specific requirements to adequately address well construction and integrity, in the short and long-term. Requirements must also address the protection of water resources and water users, ensuring that wells are:</p> <ul style="list-style-type: none"> • constructed using multiple barriers and cement grouting to prevent the escape of fluids from the well casing, minimise the risk of flow between the surface and groundwater, between aquifers, or between the gas horizon and aquifers • constructed using appropriate materials that will withstand the high pressures encountered at depth and those induced by hydraulic fracturing • constructed using appropriate materials that will withstand the effects of high temperature and corrosive fluids; minimising the risk of corrosion over the short and long term • completed with adequate capping to prevent contamination via the surface • decommissioned in a manner which ensures the long term protection of water resources, the environment and water users • constructed in accordance with legislative requirements and accepted standards • constructed by drillers with appropriate drilling certification. <p>It is noted that advice may need to be sought from the Department of Water on locations and depths of water resources, in order to complete well management plans.</p>	<p>The comments raised are covered in Item 7 of Schedule 1 which requires an explanation of how the titleholder will identify, monitor, mitigate and otherwise deal with —</p> <ol style="list-style-type: none"> (a) a well integrity hazard; and (b) a significant increase in an existing risk for the well, including the possibility of continuing a well activity for the purpose of dealing with the well integrity hazard or the risk. <p>A “well integrity hazard” means an event that may —</p> <ol style="list-style-type: none"> (a) compromise the integrity of a well; or (b) involve a risk of damage <ol style="list-style-type: none"> (i) an underground formation that contains petroleum or geothermal energy resources, or (ii) an aquifer, or (iii) any other part of the environment; <p>While the objects in regulation 4 have been amended to provide for a reduced risk of aquifer contamination, protection of onshore water resources and water users is primarily covered by the PGER(Env) Regs 2012.</p> <p>It is acknowledged that consultation with the Department of Water will be necessary in regard to water resources within the title area.</p>
159	Some items appear to overlap with Environment Plan (e.g. items 6 and 7). Clarify links.	There is not considered to be overlap as the WMP and the EP are for different purposes. A WMP is to ensure well integrity for protection of the petroleum or geothermal resource whereas the EP is to reduce risks to the environment from petroleum and geothermal activities.
160	Item 3 – add “including hydraulic fracturing.”	Hydraulic fracturing does not need to be listed. The supporting Guidelines provided for stakeholder consultation include hydraulic fracturing as one of many examples of activities covered by the term “well activity”.

No.	Schedule 1 – Well management plan	DMP Response
161	Item 4(b) should read "...injection or hydraulic fracturing activities..."	Refer to response for comment 160.
162	Replace 'Showing' that each well activity ... with 'Demonstrating' that each well activity ...	"Showing" has the same meaning as demonstrating and is used to keep consistency with the Commonwealth OPGGS(RMA) Regs.
163	Should include minimum specifications and refer to accepted standards/best practice guidelines (refer back to general comments also). Proponents should be required to specify guidelines/standards they have used to ensure they are appropriate.	<p>The PGER (RMA) Regulations require the submission of a WMP which:</p> <ul style="list-style-type: none"> • is appropriate for the nature and scale of the activity or proposed use; • demonstrates that the drilling impacts and risks of the activity will be ALARP; • provides for appropriate well management performance objectives, standards and measurement criteria; and • complies with the Act, the relevant Petroleum (RMA) Regulations and applicable State statutes. <p>The move from prescriptive regulation to objective-based regulation places the emphasis on petroleum and geothermal titleholders to identify risks and effects and establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use.</p>
164	Add "what measures are taken to protect aquifers, particularly in terms of casing, barriers, placement of grout, etc.	It is not necessary to add these to this list of contents for a WMP as it is covered in item 15(e)(f)(g). Additionally, risks to aquifers, water resources, the environment or water users are covered in the PGER(Env) Regs.
165	Add 'evaluation' stage between exploration and recovery.	The evaluation of petroleum or geothermal energy resources is a component of the process prior to recovery. However, it is not a well activity and, as such, does not need to be added to Schedule 1.
166	Item 8 may overlap with DMP chemical guidelines. Consider linkages.	Item 8 is different to the chemical disclosure provision in the PGER(Env) Regs. For the WMP purposes, it is a list of products used whereas, for an EP, DMP uses chemical disclosure information, which includes product volumes, chemical ingredients and their concentrations, to assess environmental impacts and risks as part of assessing an EP.
167	Replace 'Details of chemicals' and ... with 'Full disclosure of chemicals and their composition' and	As described in the response for comment 166, full disclosure of chemicals used for onshore activities is covered in the PGER(Env) Regs.
168	Item 9 – Specify "chemical" composition.	Refer to response for comment 166.
169	Item 11 should read ... "produced formation fluids or ..."	"Material" is the term chosen as it covers both fluids and non-fluid items such as sand and rock.
170	Item 12 – Add "in accordance with these regulations."	This change is not considered necessary as the information required in item 12 of Schedule 1 relate directly to regulation 17.
171	Item 15e,f,g – include description of materials used, construction details, depths of casing and cement grout seal, etc.	It is considered that the information requested to be added is adequately covered in items 15 (e)(f) and (g) of Schedule 1 and that titleholders readily understand that this information would be required to be included in a WMP.

No.	Schedule 1 – Well management plan	DMP Response
172	15j should be geological descriptions and logs, including descriptions, depths and thicknesses of aquifers encountered; aquifer characteristics (if determined); water quality and water quantity information available.	Item 15(j) relates specifically to the well. Information on aquifers would only be required to be provided in a WMP under items 7 and 12 if it was deemed to be a “well integrity hazard”.
173	Content of a WMP, outlined in Schedule 1. (page 71) Highly prescriptive – but considered necessarily prescriptive. [State Government agency] is supportive that this is retained.	Comment noted.
174	<p>Items 7-12 –</p> <p>The [State Government agency] requires careful consideration by regulators (DMP & DoW) to ensure that chemicals listed from this requirement are adequately assessed in terms of toxicological importance, including overall pressure on any local PDWSAs. If adequate standards have not been referenced in the WMP, it is recommended that more investigation is necessary, or referral to [State Government agency] for further advice may be necessary.</p> <p>The [State Government agency] recommends development and application of “Concentration of No Toxicological Concern” (CoNTC) for all of the toxic chemicals being used in hydraulic fracturing to establish what concentrations would have negligible public health impacts. For more information, refer to Interagency Science Needs Working Group and specifically the [State Government agency] Proposal for CoNTC.</p> <p>If the predicted or modelled exposure concentrations are above the “Concentration of No Toxicological Concern” the precautionary principle should be applied. Demonstration that the hierarchy of controls will significantly reduce the risks will be necessary. If the risk cannot be adequately reduced, the [State Government agency] would be unable to support approval for the proposal.</p>	<p>The purpose of Item 8 is to provide a list of chemicals and other substances that may be used in a well activity.</p> <p>It is different to the chemical disclosure provisions in the PGER(Env) Regs where DMP requires chemical disclosure information, including product volumes, chemical ingredients and their concentrations, to assess environmental impacts and risks, as part of assessing an EP. Refer to the Chemical Disclosure Guideline at http://www.dmp.wa.gov.au/documents/ENV-PEB-178.pdf.</p>
175	<p>Item 14</p> <p>This is a very prescriptive, time consuming component of legislation and its function is currently obscure. It appears that inclusion of a list of all the current standards will demonstrate to the regulator that the project proponent has considered and adopted best practice standards, yet there is currently no directly stated requirement for a commitment to follow any of the listed standards</p> <p>Suggestion: Define oil-field best practice based on national and international best practice within a risk-management paradigm in the Regulations. Reference to ISO31000:2009 explicitly in the regulations, or within the Guideline, would be beneficial to operators, inspectorate and other regulators if there is a need for prosecution or direction to undertake a specific activity with respect to RMAA.</p> <p>It is recommended that there be a requirement for a list of the standards adopted by the company. If these are not adequate, the DMP will then be required to request or direct that alternative standards be achieved that are known to be more effective , thereby reducing the impacts to public health if there is any loss of well integrity.</p>	<p>The PGER (RMA) Regulations require the submission of a WMP which:</p> <ul style="list-style-type: none"> • is appropriate for the nature and scale of the activity or proposed use; • demonstrates that the drilling impacts and risks of the activity will be ALARP; • provides for appropriate well management performance objectives, standards and measurement criteria; and • complies with the Act, the relevant Petroleum (RMA) Regulations and applicable State statutes. <p>The move from prescriptive regulation to objective-based regulation places the emphasis on petroleum and geothermal titleholders to identify risks and effects, establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use.</p>
176	Schedule 1 – WMP – why are there no line items specifying how much land will be cleared in the placement of the wells and how this land will be rehabilitated at termination?	Land clearance and rehabilitation are covered in the PGER(Env) Regs.

No.	Schedule 1 – Well management plan	DMP Response
177	<p>[Petroleum/mining industry representative body] suggests a more logical order for the structure of a WMP, which better reflects the purpose and intent of a 'well management plan', 'activity' and 'operation':</p> <ul style="list-style-type: none"> • Schedule 1 –Well Management Plan, to include Items: 4, 7, 12, 13. • Schedule 1a–Activity Plan to include items: 1, 2, 3, 6, 7, 8, 9, 10, 11, 14, 15. <p>Under this structure, the activity plan (with risk assessment) and well integrity management approach for each operation within the activity would refer to the well management plan as the overarching document that includes the respective risk management and well integrity process controls. Restructuring Schedule 1 in two parts would also make auditing a more efficient process.</p>	<p>The suggestion to re-order Schedule 1 into a more logical structure is considered to be worthwhile enhancement for a future revision of the regulations after they have come into effect.</p>
178	<p>Schedule 1 (4) – again as in comments for 16(c), “<i>sound engineering principles, codes, standards and specifications and, if the activity relates to the exploration for or recovery of petroleum, good oil-field practice</i>”, this statement is too vague. Measurable provisions must be defined.</p>	<p>Refer to response provided for comment 46.</p>
179	<p>Schedule 1 (7b) – “<i>a significant increase in an existing risk for the well, including the possibility of continuing a well activity for the purpose of dealing with the well integrity hazard or the risk</i>”. “Significant increase” is open to interpretation. It must be measurable.</p>	<p>The move from prescriptive regulation to objective-based regulation places the emphasis on petroleum and geothermal titleholders to identify risks and effects and establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use.</p> <p>Due to the specific “fit for purpose” nature of WMP’s, titleholders are encouraged to have early discussion with DMP to streamline planning and preparation of the WMP. In these discussions, specific examples can be provided to assist in the process.</p>
180	<p>Schedule 1 (8) – as in general comment 2 – regulations fail to consider substances used in the fracking process and associated processes reacting with naturally occurring volatile organic compounds. Resulting substances (which in the US Marcellus shale have been found to comprise of some of the most carcinogenous substances) must be tested for safety and assessed prior to hydraulic stimulation and therefore mobilisation.</p>	<p>Provisions for the full disclosure of chemicals used for onshore petroleum and geothermal activities are contained in the PGER(Env) Regs. Refer to the Chemical Disclosure Guideline at http://www.dmp.wa.gov.au/documents/ENV-PEB-178.pdf</p>
181	<p>Sch 1 (4) & (8): “sound engineering principles, codes and standards and specifications” – as for 13 above.</p>	<p>Refer to response provided for comment 46.</p>
182	<p>Schedule 1 – Well Management Plan – items 8(a), (b) and (c) and 9. These details are already required to be reported in the Environmental Plans as specified in the Environmental regulations 15(7) and 15(9). The environmental regulation 34(2) and 34(7) also requires the operator to report actual quantities 3 months after the Environmental Plan is approved and every subsequent period of 3 months 34 (1)(a) and 34 (1) (b). Operator’s already have significant reporting requirements. It would be appreciated if the regulator’s environmental and Resources and Administration departments could rationalize the reporting requirements such that they are not replicated. This is a waste of human resources (time and money).</p>	<p>Items 8 and 9 are different to the requirements under the PGER(Env) Regs as they relate specifically to a well activity compared to a broader petroleum or geothermal activity for an EP.</p>

Amendments made since consultation draft

- item 2 has been amended to make the location details consistent with those in item 6 of Schedule 7 – Final well activity report and item 7 in Schedule 9 – Well completion report.
- In item 6, “management” has been deleted and replaced with “measurement”. This is to align with the equivalent Commonwealth regulation and was an error that was not picked up in draft 1 of the Regs.
- In item 15 sub-items (l)(m)and (n), “drilling operations” changed to “drilling activities”.

No.	Schedule 2 – Annual assessment report	DMP Response
183	Clarification is required as to whether this requirement is applicable to both geothermal and petroleum activities.	Yes, the reporting requirements are for both petroleum and geothermal activities.
184	The assessment report is focused on petroleum/geothermal activities. It doesn't cover the assessment of impacts on the environment, water resources, water users, human health, etc. Clarify whether this is the intent. If these things are not to be covered here, make clear where they are covered.	Quite rightly, the annual assessment reporting requirements are focussed on petroleum and geothermal activities. Annual reporting of environmental performance is required in regulation 16 of the PGER(Env) Regs.
185	Different information is required for the permittee, lessee and licensee. Is this always appropriate? Could there be cases where these are the same person, and if so, would all of the information still be required from that person? If not, include relevant information under each section.	Different information is required depending on whether the title is an exploration permit, retention lease or production licence. Regulation 38 provides that a titleholder with more than one title may combine reports into a single document with the agreement of the Minister.
186	Add – reporting of monitoring results, including abstraction and injection volumes for each production and injection bore respectively; water levels or pressures in injection, abstraction and monitoring bores; temperature of abstracted and reinjected water (for geothermal bores).	The suggested changes are not directly related to information on petroleum and geothermal activities required to be provided in this Schedule.
187	For geothermal operations, add – “The temperature and pressure of the groundwater as it passes through the geothermal system should be mapped and presented in the report.”	Refer to response for comment 186.
188	<p><i>Division 1</i></p> <ul style="list-style-type: none"> • Item 3(b) – add “water resources identified, risk assessment” • Add details of any incidents and how they were managed. 	Refer to response for comment 186.
189	<p><i>Division 2</i></p> <ul style="list-style-type: none"> • Should this information also be included under Division 1 for cases where there is no lessee? 	The information in Division 2 would not be required if there was not a retention lease.
190	<ul style="list-style-type: none"> • Item 11 – refer to petroleum or geothermal resources, not petroleum pool (in the lease area?). 	<p>It is acknowledged that the term “petroleum pool” only relates to conventional petroleum resources and has no relevance for unconventional resources which are not found in discrete accumulations.</p> <p>The PGERA67 defines “petroleum pool” but this definition has not yet been amended to incorporate unconventional petroleum resource terms and provisions.</p> <p>The PGER(RMA) Regs cannot include unconventional petroleum resource terms and provisions as s43(1) of the <i>Interpretation Act 1984</i> states that “Subsidiary legislation shall not be inconsistent with the provisions of the written law under which it is made, or of any Act, and subsidiary legislation shall be void to the extent of any such inconsistency.”</p> <p>Until amendments are made to the PGERA67, and subsequently these Regulations, readers are requested to take a broader interpretation of the meaning of petroleum pool to also include “unconventional petroleum resource areas”.</p>
191	In Division 3 Item 17 – add “water resources encountered.”	Refer to response for comment 186.
192	In Division 3 Item 18 – Should this information be required each year after the first year of the licence? refer to petroleum or geothermal resources, not petroleum pool (in the lease area?)	Refer to response for comment 186.

No.	Schedule 2 – Annual assessment report	DMP Response
193	In Division 3 Item 20 – Recommend changing to “The amount of each substance injected into a petroleum/geothermal formation/reservoir during the year, including water.”	Refer to response for comment 186.
194	In Division 3 Add – “The amount of each substance abstracted/recovered from a formation/reservoir, including water.	Refer to response for comment 186.
195	In Division 3 Add – “A description of any incidents that occurred, the contingency measures that were taken, resulting impacts and any ongoing monitoring/management required.	Refer to response for comment 186.
196	In Division 3 Add – “Bore construction details for all bores (e.g. production, injection and monitoring bores), including any data collected (e.g. geological, geophysical, chemical and water level data).	Refer to response for comment 186.
197	Sch 2: industry may complain that the required disclosures are too broad. All information disclosed to the regulator should be also available to public access.	Annual assessment reports are deemed to be “excluded information” under regulation 82 and are therefore will be permanently confidential. Please note that the reference to Part 2 or 3 in regulation 82 (3(i)) is incorrect and has been amended to Parts 4 or 5.

Amendments made since consultation draft

item 20 has been amended to delete “reservoir” and “replace this with “underground formation”.

No.	Schedule 3 – Field development plan	DMP Response
198	The guideline for these regulations refers to two stages of submission for a field development plan (preliminary and final). This requirement needs to be included in the regulations.	The Guidelines are incorrect and will be amended to reflect the provisions in the regulations.
199	Add “for petroleum activities” to the title.	This is unnecessary as FMPs are specifically for the recovery of petroleum.
200	Generally need to replace the term “pool” with “resource.”	Refer to response for comment 190.
201	Items 1 and 3(a) appear to be the same.	Petroleum fields can be large and may contain many petroleum pools. Item 1 relates to discovered pools whereas 3(a) is for pools that have been identified but are to be confirmed by further exploration.
202	Item 5. Add – the number of wells; the expected orientation/path of wells; the estimated depth/length of wells; estimated locations and depths of hydraulic fracturing that may be required.	This specific information would not be known at the time for submission of a FMP. It would be appropriate for this to be included as part of the WMP required for the production phase of the well activity.
203	Item 5. In b) define/explain workover. Add timing of construction of wells.	“Workover” is the process of performing major maintenance or remedial treatments on an oil or gas well.
204	Item 5. In c) define/explain tie-ins.	Possible tie-ins refer to possibility of joining or connecting to other petroleum fields.
205	Item 8 Replace the term “aquifers” with “surface water or groundwater resources.” This should read – the applicant’s proposals for the protection and management of such aquifers including the assessment of impacts and proposals for baseline monitoring.	Aquifer is specifically used as this item is to identify sub-surface water that may be impacted by the proposed field development. Surface water or groundwater is therefore not relevant. Onshore aquifer protection is a different aspect and would be required to be addressed in the EP for the title in accordance with the PGER(Env) Regs.
206	Item 8 Add: It is noted that the PGER Act (s 113) imposes a requirement on proponents to inform the Minister of particulars of any water being discovered. These requirements should include estimates of water quantity and water quality for each water resource.	FMPs are specifically for the recovery of petroleum and estimates of water quality and quantity are not relevant. Information regarding water discoveries is also covered in Part 5 as an item to be included in a discovery assessment report in regulation 36.

No.	Schedule 3 – Field development plan	DMP Response
207	Item 9 (b) Add – “including wells.”	It is not considered necessary for the estimated dates for cessation of wells or well closure to be provided in the FMP.
208	Item 10 Specify requirements that activities must be undertaken in accordance with.	A response for this comment is not provided as the intent of the proposed change is not clear.
209	Item 10 (b) Add – “and chemicals.”	A list of chemical products used is covered as part of the contents of a WMP in item 8 of Schedule 1. Chemical disclosure information, which includes product volumes, chemical ingredients and their concentrations, is required under the PGER(Env) Regs to assess onshore environmental impacts and risks as part of assessing an EP.
210	Item 10 Should read “the injection of petroleum into an underground petroleum formation . . .” (i.e. injection into an aquifer should not be permitted).	In item 10, previous sub-item (c) relating to injection of petroleum into an underground formation has been deleted to ensure there is no conflict with the requirements listed in section 67 of the PGERA67.
211	Item 10 Should this read – “ the injection of wastewater into an underground petroleum formation? The quality of the water resources should not be compromised by the injection of waste water into that water resource. You may wish to refer to the <i>DoW Policy 1.01 Managed aquifer recharge in Western Australia</i> .	DMP requires that the petroleum licensee provides in the FMP details of all water injected or proposed to be injected into an underground formation.
212	Item 11 Change “pool” to “petroleum resource.”	Refer to response for comment 190.
213	Item 13 Change “pool” to “resource.”	Refer to response for comment 190.
214	Item 13 Change to “surface connections and equipment to be used . . .”?	Item 13 has been amended to add in “to be used”.
215	Item 14 Explain “geological risk”	Geological risk in the context of a FMP, is a geological condition, process or event that is or which represents a potential threat to recovery of petroleum. These can be geotechnical risks such as earthquakes, volcanic eruptions, landslides, storms, flooding or geotechnical risks which are induced geological hazards and enhanced by human error of calculation and lack of prevention in civil engineering.
216	Item 14 Add risks to the environment, water resources, existing water supplies and human health.	The risks information that is required for a FMP must relate directly to the petroleum or geothermal resource. Risks to the environment, water resources, existing water supplies and human health for onshore petroleum and geothermal activities are required as part of an EP under the PGER(Env) Regs.
217	Item 16 Add “of the field, including all wells.”	It is considered that information regarding well closure is not necessary to be added.
218	Item 17 The regulations should list accepted standards.	Accepted standards are not required to be listed in these regulations. The move from prescriptive regulation to objective-based regulation places the emphasis on petroleum and geothermal titleholders to identify risks and effects and establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use.
219	Item 17 Add – “arrangements for the disposal of any wastewater or chemicals.	Arrangements for the disposal of any wastewater or chemicals from onshore petroleum and geothermal activities are covered in the PGER(Env) Regs.

No.	Schedule 3 – Field development plan	DMP Response
220	Section 4.3.2 of the Guidelines for the Petroleum and Geothermal Energy Resource (Resource Management and Administration) Regulations 2014 (Guidelines) states that whilst the content required for a Field Development Plan is set out in Regulation 48 and Schedule 3 of the Draft Regulations, petroleum licensees should also ensure that <i>“estimates of the volume of petroleum in place and recoverable petroleum, including data supporting the estimates should include the probabilistic methodology of the range of reserve estimates provided”</i> . In [petroleum company’s] experience, the deterministic methodology is commonly used for unconventional resource estimation. In light of this, [petroleum company] suggests that clarification be made in the Guidelines and Schedule 3 of the Draft Regulations that either the deterministic or probabilistic methodology may be used for in place and recoverable resource estimation.	In view of the change from prescriptive regulation to objective-based regulation, the type of methodology to be used will not be prescribed in regulation. Further details will be provided in the supporting Guidelines.
221	Field development plan does not a plan for baseline studies of methane emissions, expected methane emissions nor does it include the monitoring of fugitive emissions. This is unacceptable given the urgent need to address climate change. Human health impacts must also be considered; many studies have highlighted the impacts this industry can and does have on human health and therefore must be assessed and incorporated into plans from day 1. See references for studies relating to fugitive emissions, carbon footprint and human health impacts.	Monitoring of fugitive emissions from onshore petroleum and geothermal activities is undertaken on a risk-based approach and are covered in the PGER(Env) Regs.
222	Schedule 3 (10) – missing from the regulations are assessments into the impacts of reinjection into underground formations.	Item 10 has been amended to delete previous sub-item (c) which was for the injection of petroleum into an underground formation for the purpose of storage and subsequent recovery. The licensee is still required to include operations or proposals for the injection of water and treatment material into an underground formation in new item 10 (c). The information to be provided in this regard would need to cover any impacts or risks to the underground formation from these activities.

Amendments made since consultation draft

- item 6 has been amended to also require details of the past performance, if applicable of the production well in addition to the predicted future performance.
- In item 7 information about the maximum rate of recovery has been changed from an “estimate” to the “proposed”. The proposed maximum rate of recovery that the licensee plans to recover petroleum is more important than an estimate of what the field’s maximum rate of recovery could be. It has also been added following the deletion of regulations 62 and 63 relating to approval of the rate of recovery.
- In item 10, previous sub-item (c) relating to injection of petroleum into an underground formation has been deleted to ensure there is no conflict with the requirements listed in section 67 of the PGERA67.
- A new sub-item 10(c), which was previously sub-item (d) has been broadened to require the licensee to provide details of any treatment fluid injected into an underground formation along with water.
- In item 13(a) has been amended from details of “surface connections and equipment used” to details of “surface connections and equipment to be used” to fit in with plan concept prior to recovery of petroleum being undertaken.
- In item 15 “hydrocarbons” changed to “petroleum”.
- In item 16, “abandonment” has been deleted as this is the same as “decommissioning”.

No.	Schedule 4 – Geothermal energy recovery development plan	DMP Response
223	In Item 3 Add (after (a) “the geological formations in which they are contained”).	In the PGERA67, the term “geothermal energy resources” means “subsurface rock or other subterranean substances that contain geothermal energy and, where the context so requires, includes the geothermal energy contained in those resources”. In view of this, it is not necessary to add the “the geological formations in which they are contained”.
224	In Item 3 (b) Not clear what this means. Similar to Item 4(b)?	Item 3(b) is included as a geothermal licensee has a right, under section 62 of the PGERA67, to continue to explore for geothermal energy resources within their licence. It is different to item 4(b) which is a description of proposed or alternative field development scenarios.
225	In Item 5 Add – the number of wells; the expected orientation/path of wells; estimated depth/length of wells; estimated locations and depths of any hydraulic fracturing that may be required.	Refer to response for comment 202.
226	In Item 5 (b) define/explain workover. Add timing of construction of wells.	Refer to response for comment 203.
227	In Item 5 (b) define/explain tie-ins.	Refer to response for comment 204.
228	Item 8 – Replace the term “aquifers” with “surface water or groundwater resources.” b) the geothermal licensee’s proposals for the protection and management of such aquifers including the assessment of impacts and proposals for baseline monitoring.	Refer to response for comment 205.
229	Item 8 – Add – potential losses from aquifers due to degassing, changes in temperature and pressure, or groundwater volumes circulating through pipes, heat pump, etc., should be estimated as accurately as possible.	The information to be provided in item 8 is intentionally broad so as to not limit the identification of potential impacts on aquifers from development of the field. The suggested amendments are, therefore, not considered necessary.
230	Item 10 Specify requirements that activities must be undertaken in accordance with.	Refer to response for comment 208.
231	Item 10 (b) Add – “and chemicals.”	Refer to response for comment 209.
232	Item 10 Add – “arrangements for the disposal of any wastewater or chemicals.	Refer to response for comment 219.
233	Item 12 Change to “surface connections and equipment to be used...”?	Refer to response for comment 214.
234	Item 12 Add “details of any chemical use associated with pipe work in contact with the environment and measures taken to ensure prevention of corrosion and leakage.”	Details of onshore chemical use and environmental impact are required to be provided in the PGER(Env) Regs.
235	Item 13 Explain “geological risk”	Refer to response for comment 215.
236	Item 13 Add risks to the environment, water resources, existing water supplies and human health.	Refer to response for comment 216.
237	Item 13 Add thermal breakthrough.	Thermal breakthrough is understood to result from the re-injection of water into a geothermal resource area. It is considered that thermal breakthrough only has a minor impact on FMP’s however, if considered a risk it would be addressed under new sub-item 10(c), where a geothermal licensee is required to provide details of operations or proposals for the re-injection of water and treatment material into an underground formation.

No.	Schedule 4 – Geothermal energy recovery development plan	DMP Response
238	Item 13 Add well screen and aquifer clogging.	Well screen, which is understood to be referring to sand control, is covered in sub-item (e) in the management of refuse from tanks and wells. Aquifer clogging is not relevant to the PGER(RMA) Regs and, if applicable, to a geothermal activity, would be covered under the PGER(Env) Regs.
239	Item 13 Add “geochemical changes (such as changes in pH levels or the solubility of minerals) and resulting potential impacts upon water resources, the environment, infrastructure and water users.	Details of how a licensee will manage geochemical changes, including the examples provided, and their impact upon water resources, the environment and water users are required to be provided in the PGER(Env) Regs. Details of how a licensee will manage geochemical changes in relation to infrastructure are not within the scope of a FMP.
240	Item 13 Add – “Where re-injection is involved, the expected temperature difference between the re-injected water and the receiving formation should be determined and potential impacts outlined.	Refer to response provided for comment 237.
241	Item 15 Add – “including wells.”	Refer to response for comments 207.
242	Sch 4(8)(a): first time “aquifers” mentioned, yet these are due to be impacted on detrimentally by all these activities.	The reduction in the risk of aquifer contamination has been added to the objects of the PGER(RMA) Regs. The term “aquifer” was used in the consultation draft in the following regulations and schedules: Reg 10 – Requirement to have approved WMP, Reg 11 – Requirement to undertake well activity in accordance with approved WMP, Reg 62 – Requirement to notify Minister of significant event, Sch 3 – Field Management Plan, and Sch 4 – Geothermal energy recovery development plan Aquifer is also in the definition of “well integrity hazard” where the potential for risk of damage to an aquifer is considered to be a well integrity hazard. Well integrity hazard is used in the following regulation and schedule: Reg 33 –Requirement to control well integrity hazard or risk, and Sch 1 – Well management plan.

Amendments made since consultation draft

- item 6 has been amended to also require details of the past performance, if applicable of the production well in addition to the predicted future performance.
- In item 7 information about the maximum rate of recovery has been changed from an “estimate” to the “proposed”. The proposed maximum rate of recovery that the licensee plans to recover petroleum is more important than an estimate of what the field’s maximum rate of recovery could be. It has also been added following the deletion of regulations 62 and 63 relating to approval of the rate of recovery.
- In item 12(a) has been amended from details of “surface connections and equipment used” to details of “surface connections and equipment **to be** used” to fit in with plan concept prior to recovery of petroleum being undertaken.
- In item 15, “abandonment” has been deleted as this is the same as “decommissioning”.

No.	Schedule 5 – Daily well activity report	DMP Response
243	Add “for petroleum and geothermal operations to the title if applicable”.	This suggested change is not considered necessary.
244	Item 4 – Change to the “water level/pressure in the well (if applicable).”	This suggested change is not considered relevant.
245	Item 6 – Add – “being undertaken.” Add for petroleum and geothermal operations to the title if applicable.	Neither of the changes is considered necessary.
246	Item 8 – Amend to “lithology, depth and thickness of underground formations, including aquifers, penetrated”	Depth and thickness is normally part of the lithology of an underground formation and does not need to be separately listed. For the purposes of this Schedule, underground formations penetrated include “aquifers” and, again, does not need to be separately listed.
247	Item 9 – Add “including source formations and depths.”	This suggested change is not considered necessary.
248	Item 12 – specify the data that is to be provided.	This suggested change is not considered necessary.
249	Item 17 – Add “and qualifications.”	This suggested change is not considered relevant as the name of the drilling contractor refers to the company name.
250	Item 21 – Replace ‘Details’ of chemicals. . . . with ‘Full disclosure’ of chemicals.	Provisions for the full disclosure of chemicals used for onshore petroleum and geothermal activities are contained in the PGER(Env) Regs.
251	Item 23 – Amend to “drilling and injection parameters” and add “injection pressure	This suggested change is not considered necessary.
252	Add – “ the volume of treatment material and produced formation material disposed of, and details of disposal methods and locations (ensuring that this includes wastewater from drilling and hydraulic fracturing).”	This suggested change is covered under items 10, 15 and 16.
253	Add test pumping undertaken (for geothermal resources)?	This suggested change is not considered necessary.
254	Add “account of any incidents that occurred and contingency measures undertaken.”	Any incidents encountered during a well activity and contingency measures undertaken would be recorded in the hourly operational breakdown of the work carried out in item 19. Serious well activity incidents are required to be reported in accordance with regulations 10(2)(c) and 11(2)(c).
255	Add “details of any well construction/completion/development undertaken.”	Details of any well construction, completion, or development work undertaken is recorded in the hourly operational breakdown of the work carried out in item 19.

Amendments made since consultation draft

- Name of the report changed to Daily well activity report.
- Item 5 amended to require the coordinates of the bottom of the well bore to be advised when the total depth has been reached.

No.	Schedule 6 – Final activity data	DMP Response
256	Add for petroleum and geothermal operations to the title if applicable.	This change is not considered necessary.
257	Add lithological log.	This change is not considered necessary.
258	Add water level/pressure data.	This change is not considered necessary.
259	Add metered/measured volumes of fluids injected and abstracted, including water.	This change is not considered necessary.

Amendments made since consultation draft

- Name of the Schedule changed to Final well activity data.
- In items 3 and 5, “META” has been deleted from the Standard formats column.

No.	Schedule 7 – Final activity report	DMP Response
260	Add for petroleum and geothermal operations to the title if applicable.	This change is not considered necessary.
261	Item 11 – amend to water level/pressure.	This change is not considered necessary.
262	Item 12 – amend to depth/length of the well (to allow for any horizontal component).	This change is not considered necessary.
263	Item 14 – change “pool” to “resource.”	Refer to response for comment 190.
264	Item 19 – add hydraulic fracturing; construction of site works.	This change is not considered necessary.
265	Item 21 – Add “including materials used and depths of installation.”	This change is not considered necessary.
266	Item 22 – Add “including specifications of cement used and depths of grouting.”	This change is not considered necessary.
267	Item 23 – including quantities and providing Material Safety Data Sheets.	The “quantity” of treatment fluid used is inherent in this item. Material Safety Data Sheets are not required for the PGER(RMA) Regs and if applicable to an onshore well activity would be required to be provided under the PGER(Env) Regs.
268	Item 24 – Add “and an indication of how and where losses occurred.”	This change is not considered necessary.
269	Add after Item 27 – “details of any water resources encountered, including quality and quantity, depths and formations.”	Section 113 of the PGERA67 requires the reporting of any water discovered and particulars of the discovery. This requirement does not need to be reiterated in these regulations.
270	Item 29 – including constituents and quantities.	This change is not considered necessary.
271	Add details of any real-time monitoring undertaken for hydraulic fracturing.	This change is not considered necessary.
272	Add – “The amount of each substance abstracted/recovered from a formation/reservoir, including water.	This change is not considered necessary.
273	Add – “A description of any incidents that occurred, the contingency measures that were taken, resulting impacts and any ongoing monitoring/management required.	This change is not considered necessary.

Amendments made since consultation draft

- Name of the report changed to Final well activity report.
- In item 5 “abandoned” has been deleted and replaced with “decommissioned”.
- In item 22 “abandonment” has been deleted and replaced with “decommissioning”.

No.	Schedule 8 – Well completion data	DMP Response
274	Add – “Bore construction details for all bores (e.g. production, injection and monitoring bores) including specifications of materials used; intervals of vertical and horizontal components; depths of all casing and cement grout; perforated/hydraulically fractured intervals; description of headworks, etc.).	This suggested change is not a responsibility of DMP.
275	Add lithological logs.	This change is not considered necessary.

Amendments made since consultation draft

- In items 3, 5 and 7 “META” has been deleted from the Standard formats column.

No.	Schedule 9 – Well completion report	DMP Response
276	Item 5 – add “including hydraulic fracturing.”	Hydraulic fracturing does not need to be listed as an example of the purpose of a well in item 5. The supporting Guidelines provided for stakeholder consultation include hydraulic fracturing as one of a number of examples of activities covered by the term “well activity”.
277	Item 5 –Amend to “geothermal energy or petroleum recovery.”	Recovery activities do not need to be listed in item 5 as they are covered under development.
278	Item 13 – amend to water level/pressure.	This change is not considered necessary.
279	Item 17 – change “pool” to “resource.”	Refer to response for comment 190.
280	Item 21 – add “and qualifications”	Refer to response for comment 249.
281	Item 25 – add hydraulic fracturing; construction of site works.	Refer to response for comment 264.
282	Item 27 – Add “including materials used and depths of installation.”	Refer to response for comment 265.
283	Item 28 – Add “including specifications of cement used and depths of grouting.”	Refer to response for comment 266.
284	Item 30 – Add “detailing specific constituents used and quantities”.	Refer to response for comment 270.
285	Item 31 – Add “specifying volumes and indicating where losses have occurred.”	This change is not considered necessary.
286	After Item 31, add – “hydraulic fracturing fluids used, detailing specific constituents used and quantities” and “hydraulic fracturing fluid losses, specifying volumes and indicating where losses have occurred.”	This change is not considered necessary.
287	Item 34 Amend to “reservoir/source formation...”	This suggested change is covered in item 36(e).
288	Add – “aquifers, including water quality and quantity”	This change to item 34 is not considered necessary.
289	After Item 38 – add “test pumping results if applicable (for geothermal operations?).	It is considered that the suggested change is covered in item 40.
290	Item 39 – Amend to “...hydrocarbon/geothermal potential...”	Change agreed and regulation updated.
291	Add “results and interpretation of any test pumping of aquifers.”	It is considered that the suggested change is covered in item 40.

Amendments made since consultation draft

- In items 6 “abandoned” has been deleted and replaced with “decommissioned”.
- Items 17, 20 and 21 have been separated from previous item 20 and in item 17 “reservoir” has been replaced with “underground formation”
- In item 30 “abandonment” has been deleted and replaced with “decommissioning”.
- In item 36(d) “reservoir” has been replaced with “underground formation”
- In item 41 “or geothermal” has been added in addition to petroleum.
- In items 41 and 42 “hydrocarbons” changed to “petroleum”.

No.	Schedule 10 – Weekly survey report	DMP Response
292	Add “The type of survey.	The type of survey would be able to be identified from the name of the survey.
293	Item 10 Add – “...specifying the nature of the problems, if and how resolved if applicable.”	This change to item 10 is not considered necessary.

No change to Schedule 10 since consultation draft.

No.	Schedule 11 – Survey acquisition data	DMP Response
	No comments received	N/A

No change to Schedule 11 since consultation draft.

No.	Schedule 12 – Survey acquisition report	DMP Response
	No comments received	N/A

No change to Schedule 12 since consultation draft.

No.	Schedule 13 – Processed survey data	DMP Response
	No comments received	N/A

No change to Schedule 13 since consultation draft.

No.	Schedule 14 – Survey processing report	DMP Response
	No comments received	N/A

No change to Schedule 14 since consultation draft.

No.	Schedule 15 – Interpretative survey data	DMP Response
	No comments received	N/A

No change to Schedule 15 since consultation draft.

No.	Schedule 16 – Survey Interpretation report	DMP Response
	No comments received	N/A

No change to Schedule 16 since consultation draft.

No.	Schedule 17 – Monthly production report	DMP Response
294	Information for geothermal licensee includes 'water or other fluid injected.' This will need to be closely monitored in the Shale and Tight Gas area.	Comment noted.
295	Item 1 – Add – “the (separate) quantities of water produced and injected.”	This is covered in items 2(a)(vii) and (viii).
296	Item 2 – (iii) No longer permitted?	A response for this comment cannot be provided as the suggested amendment is not understood.
297	Item 2 – Add “hydraulic fracturing fluids injected” and wastewater/formation water recovered.”	This is covered in items 4(a).
298	Item 3 (f) Change “geothermal energy” to “geothermal fluids.”	Geothermal energy is a term in the PGERA67 and means “thermal energy that results from natural geological processes and is contained in geothermal energy resources”. As subsidiary regulations must follow the primary Act, this suggested change is not considered necessary.
299	Item 3 Add – “geothermal energy produced.”	This is covered in items 3(f) and 4(a)(iv).
300	Item 3 Add – “the means of geothermal energy production (e.g. electricity generation), including a description of any cascading uses.”	This change is not considered necessary.
301	Item 3 Add – “the (separate) quantities of water injected and abstracted.”	This is covered in items 3(f) and 4(a)(ii).
302	Item 3 Add – “ the quality of water injected and abstracted.”	This change is not considered necessary.
303	Item 3 Add – “the constituents and volumes of fluids injected and abstracted.”	This is covered in items 3(f) and 4(a)(ii).
304	Item 4 (iii) Amend to “fluid disposed of”? and add details of disposal (volumes, location).	This suggested change is not applicable for a production report.

No change to Schedule 17 since consultation draft.

Guidelines for the Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2014

1 – INTRODUCTION

No.	1.1 Purpose of this document	DMP Response
305	Reference to a requirement for best practices to optimise production while ensuring risks are appropriately mitigated is necessary under these regulations, despite discussing how ALARP will change with improvements in technology and best practice. It is suggested that the guidelines and regulations do more than imply best practice is the accepted standard.	The supporting Guidelines will be amended to emphasise the need for risk assessment and management to be conducted using international best practice such as ISO Standards.
No.	1.2 Legislative context	DMP Response
	No comments received	N/A

2 – SURVEYS

No.		DMP Response
	No comments received	N/A

3 – MANAGEMENT OF WELL ACTIVITIES

No.	Management of well activities	DMP Response
306	This requires very clearly defined objectives for the regulations. Currently the objectives remain somewhat ambiguous. More detailed comment is given in Table 1 = Specific comments on PAGER (RMAA) Regulations.	Table 1 contains specific comments on the objects of the PGER(RMA) Regs and includes activities relating to exploration and recovery of petroleum or geothermal energy. The response for these is at comments 5, 6, 7 and 8.
307	Typo p3: requires – required is correct.	Change agreed. Guidelines to be updated
308	Strange semantics and terminology with respect to risk minimisation. A more direct sentence is suggested – E.g., Upstream petroleum industries are responsible for risk minimisation.	Change agreed. Guidelines to be updated
309	It is appropriate to define risk at the first mention of risk management. ALARP is defined, but the [State Government agency] recommends that there is further discussion regarding when application of best practice is warranted. For example with a marginal operation, what is considered practical is different to highly productive/low cost operations. Economic viability should not weigh significantly if there is uncertainty or potential for impact to public health or public drinking water source areas.	A definition of “risk” is provided in regulation 4. The move from prescriptive regulation to objective-based regulation places the emphasis on petroleum and geothermal titleholders to identify risks and effects and establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use . On-going consultation between titleholder and DMP is critical in determining the relevant standards and best practice in the preparation of the WMP.

No.	Management of well activities	DMP Response
310	It is assumed the strength is in the regulatory activities. This is supported, with well defined, direct regulation that supports inspectorate activities at and following the approval processes. Despite the existing capacity for strong regulatory activities by inspectors and regulatory officers, the independent review by Tina Bant (2011) recommended that regulations are comprised of explicit statements regarding minimum standards to support the inspectorate against legal challenge. For example, if an inspector imposes a higher standard than implied by the regulations, this is open to legal challenge.	Comment noted.
311	Refer to comments related to draft PAGER RMAA Regulation 4 (Table 1) and General Comments.	Refer to responses provided for comments 5, 6, 7 and 8
No.	3.1 The well management plan regime	DMP Response
312	Further brief explanation is required to demonstrate how the RMAA Regulations are “interlinked” with the Environmental Plans, Emergency Response Plans, and Safety Management Systems to ensure that any change to well management that may significantly impact one of the other risk management plans would trigger appropriate modifications to each plan, respectively.	The relationships between the PGER(Env) Regs and the onshore petroleum and safety regulations will be further explained in the supporting Guidelines.
313	Refer to comments related to draft PAGER RMAA Regulation 33 (Table 1).	Refer to response for comment 70.
No.	3.2 Pre-submission guidance	DMP Response
314	It would be helpful to provide a schematic and/or list of all the relevant DMP officers who need to be contacted. If it isn't included in this guideline, reference to it would be helpful to the proponents.	Comment acknowledged. The Guidelines will include a link to Petroleum Division staff contact list on the DMP website.
No.	3.3 Submission of documentation	DMP Response
315	Table 1. Example of Risk Classification seems out of place given the relative brief information for other regulations and requirements. This could be covered by reference to AS/NZS ISO31000 Risk Management standard.	This matter will be further explained in the supporting Guidelines.
No.	3.4 Partial approval of a WMP	DMP Response
	No comments received	N/A
No.	3.5 Content and preparation of a WMP	DMP Response
316	The guideline for these regulations states that the well management plan (WMP) will contain all the risk management and mitigation information (and that this should be separate) plus the detailed first activity program, but this is not made clear in the regulations.	Refer to response for comment 154.
317	The guideline also states that the WMP should be appropriate for the nature and scale of the activity or proposed use and that the drilling impacts and risks of the activity will be as low as reasonably practicable. These requirements need to be included in the RMA regulations.	Refer to response for comment 155.

No.	3.5 Content and preparation of a WMP	DMP Response
318	The guideline includes several requirements that should preferably be covered in the regulations.	Refer to response for comment 156.
319	The guideline mentions that changes to location or operational details of an approved WMP that result in minor additional or modified risks may be processed by written notification. Clarification is sought on the criteria that will be used to determine that a risk is minor.	Refer to response for comment 157.
320	In 3.5.1, Well Management Policy, revise wording of: “The WMP should include a copy of, or clear outline of the corporate well management policy. This policy should contain the organisation ’objectives, targets and commitments.” to “DMP will consider how well the WMP demonstrates an alignment with a corporate well management approach or policy”.	Suggested changes agreed and will be included in the Guidelines.
321	In Legislation and Requirements, revise wording of: “The WMP should include a list of all requirements that apply to the activity (e.g. State legislation). Providing this information demonstrates the titleholder is aware of all relevant legislation and other requirements relevant to that specific activity to be undertaken” to DMP will consider the extent to which the WMP demonstrates a consideration of all requirements (e.g. legislation) that apply to the activity.” Requiring a listing of legislation is unlikely to encourage consideration of how the legislative framework relates to the activity.	Suggested changes agreed and will be included in the Guidelines.
322	In Performance standards, revise wording of: “The WMP should define the quality of the performance the title holder is aiming for. Each performance objective should include at least one related standard (usually there is more than one standard required per objective)” to: “The WMP should demonstrate to DMP the quality of the performance that the title holder is aiming for, including any standards and why these are relevant.” This should seek to encourage consideration of why a specific standard is adopted (usually because it reflects best practice and a considered effort by industry to pursue continuous improvement).	Suggested changes agreed and will be included in the Guidelines
323	In 3.5.2.3 Guidelines Identification methodology, AS/NZ ISO 31000:2009‘Risk Management’ is mentioned a number of times in the Guidelines, and consistency with this standard would appear to reflect a regulatory requirement as no other risk management methodologies are identified. [Petroleum/mining industry representative body] seeks clarification as to whether this is the case.	This matter will be further explained in the supporting Guidelines.

No.	3.5 Content and preparation of a WMP	DMP Response
324	<p>In 3.5.2.3, revise wording of:</p> <p>“It is common practice to conduct a workshop to identify sources of risk and their impacts. This may include asking what can happen, how it can happen and why. This is best undertaken with a multidisciplinary team of personnel who have different perspectives and specialist knowledge of the proposal. Additionally, adequate literature reviews should be conducted, and appropriate specialist advice sought to ensure that all risks and associated impacts have been adequately identified.”</p> <p>to:</p> <p>“The WMP should demonstrate an understanding of risks, their causes, their impacts and how they will be mitigated. Operators should be able to demonstrate that activities reflect best practice (e.g. as a result of contemporary research) and that they are aware of how risks will impact their business.”</p>	Suggested changes agreed and will be included in the Guidelines

No.	3.6 Performance objectives, standards and measurement criteria	DMP Response
	No comments received	N/A

4 – THE FIELD DEVELOPMENT PLAN

No.	4.1 Objective	DMP Response
	No comments received	N/A

No.	4.2 Scope	DMP Response
325	Scope (groundwater baseline surveys) – It is suggested that the Guidelines should reflect DMP’s requirement that the Operator demonstrate that they are aware of the risks relating to an activity, including to groundwater, and the relevant mitigating measures which could include baseline groundwater monitoring.	DMP is intending to release a separate guideline covering baseline groundwater monitoring.

No.	4.3 Field development plan requirements	DMP Response
326	The reference to Section 5.3.2 does not appear to relate to an existing section.	The reference to section 5.3.2 is not correct. The Guidelines will be amended to show the correct reference of section 4.3.2.
327	In regard to the Final Field Development Plan, it is noted that “the final field development plan will generally be similar to the preliminary field development plan, but with the necessary changes in agreement with the Department”. However, the Guidelines also state “the Department will seek to request any additional information from the proponent as soon as practicable after the receipt of the final field development plan”. If the final field development plan incorporates DMP’s comments and considerations it is unclear why additional information would be sought. [Petroleum/mining industry representative body] suggests that DMP should request all relevant information prior to submission of the final field development plan, or provide a finite time period for when this information will be requested (e.g. 7 days).	<p>References to “preliminary” and “final” FDP’s are not correct and will be amended in the next draft of the Guidelines.</p> <p>Like WMPs, there will be one FMP prepared and there will be a need for early and ongoing consultation between the licensee and DMP to ensure that the plan is appropriate for the nature and scale of the activity or proposed use.</p>

No.	4.3 Field development plan requirements	DMP Response
328	In regard to 4.3.2 Application criteria for a Field Development Plan, regarding the requirement for an “Adequate description of other development options including subsurface and surface aspects, costings and (where relevant) the reasons for the rejection of the option”, [Petroleum/mining industry representative body] is strongly of the view that a number of these aspects are commercial considerations and not appropriately considered in the context of the RMA regulations.	Comment noted
329	The guideline for these regulations refers to two stages of submission for a field development plan (preliminary and final). This requirement needs to be included in the regulations.	References to “preliminary” and “final” FDP’s are not correct and will be amended in the next draft of the Guidelines. Like WMPs, there will be one FMP prepared and there will be a need for early and ongoing consultation between the licensee and DMP to ensure that the plan is appropriate for the nature and scale of the activity or proposed use.
330	Section 4.3.2 of the Guidelines for the <i>Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2014 (Guidelines)</i> states that whilst the content required for a Field Development Plan is set out in Regulation 48 and Schedule 3 of the Draft Regulations, <i>petroleum licensees should also ensure that... estimates of the volume of petroleum in place and recoverable petroleum, including data supporting the estimates should include the probabilistic methodology of the range of reserve estimates provided</i> . In [Petroleum company’s] experience, the deterministic methodology is commonly used for unconventional resource estimation. In light of this, [Petroleum company] suggests that clarification be made in the Guidelines and Schedule 3 of the Draft Regulations that either the deterministic or probabilistic methodology may be used for in place and recoverable resource estimation.	Refer to response for comment 220.

5 – SUBMISSION AND RELEASE OF PETROLEUM AND GEOTHERMAL ENERGY DATA

No.	5.1 Distribution of data	DMP Response
	No comments received	N/A
No.	5.2 Viewing, borrowing and sampling of petroleum mining samples	DMP Response
	No comments received	N/A
No.	5.3 Export of petroleum mining samples	DMP Response
	No comments received	N/A
No.	5.4 Confidentiality of data	DMP Response
	No comments received	N/A
No.	5.5 Definitions of non-derivative (basic) data	DMP Response
	No comments received	N/A
No.	5.6 Approvable media	DMP Response
	No comments received	N/A

General comments on regulations and guidelines

	General Comments	DMP Response
	Consistency with safety and environment regulations	
331	<p>It is [Petroleum/mining industry representative body's] view that the proposed RMA regulations also deliver consistency with similar regimes in Australia and reflect contemporary thinking on how to mitigate risks relating to modern petroleum operations.</p> <p>ENSURING A HOLISTIC REGULATORY FRAMEWORK IN WESTERN AUSTRALIA</p> <p>The safety, environment and resource management components of a petroleum activity need to be considered as a holistic system/nexus that mitigates risk. The regulatory framework should encourage interaction across these regulations, including by ensuring a common approach to regulation. Protecting people and the environment, while enabling the commercial extraction of hydrocarbons, is a highly complex operation which requires an integrated approach to safety, environment and well design and construction.</p> <p>There is therefore a need to ensure consistency of approaches across the key regulatory areas that DMP oversees for petroleum operations, including the safety, health and structural integrity of facilities (safety case), environmental risks and impacts arising from petroleum activities (environment plan) and the maintenance of well integrity (well management plan). These three key 'permissioning' documents often cover activities that can interrelate, include common performance standards (e.g. for well integrity hazards, risks and controls), and can cross-reference each other at key points. It is therefore critical that the underpinning principles and approaches across these areas are consistent and are able to facilitate cross-referencing, which also helps to reduce duplication.</p> <p>FINDING 3 -The introduction of objective-based resource management regulations will complement the existing environment and safety regulations and ensure a holistic approach to the management of petroleum operations in Western Australia. The consideration of environment, safety and resource management within an integrated framework is also consistent with the Commonwealth approach taken by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Common approaches to risk management, where that approach is recognised as best practice, is an important issue for activities crossing Commonwealth and WA jurisdictional boundaries.</p> <p>DELIVERING CONSISTENT REGULATION</p> <p>The consistency of regulation, or the extent to which jurisdictions take a similar approach to regulating activities, is a key focus for [Petroleum/mining industry representative body]. Consistency of regulation provides certainty to companies operating across multiple jurisdictions which can subsequently reduce the cost of doing business. It can also encourage the adoption of best practice across jurisdictions.</p>	<p>WA PETROLEUM AND GEOTHERMAL REGULATIONS</p> <p>All onshore petroleum and geothermal exploration and production activities in Western Australia are assessed by the DMP under the PGERA67 and its subsidiary legislation.</p> <p>The proposed resource management and administration regulations complement the existing safety and environment regulations by requiring petroleum and geothermal titleholders or operators to submit a WMP to DMP along with an EP, Safety Management System, for each proposed activity. These activities may also require assessment by and approvals from other government agencies.</p> <p>To ensure drilling, environmental and safety risks are responsibly managed during each stage of activity, DMP requires operators to implement best practice management measures and demonstrate risks will be managed to 'as low as reasonably practicable'.</p> <p>Safety Regulations</p> <p>The Safety regulations cover all safety risks which may occur at surface level. Under the PGER(MoS) Regs, all proposals are required to include a Safety Management System (SMS), which is assessed by the Resources Safety Division of DMP. The SMS is a detailed document in which an operator must identify the following:</p> <ul style="list-style-type: none"> • Causes and consequences of hazards and major accident events and their associated risks • The selection of strategies and measures to control the risks. <p>Environment Regulations</p> <p>The PGER(Env) Regs require that all petroleum activities have an approved EP. The EP is a legally binding management document, assessed by DMP, which must contain accurate information about all aspects of a proposal.</p> <p>The EP must include:</p> <ul style="list-style-type: none"> • A description of the proposed activity and environment • Environmental risk assessment • Performance objectives, standards and measurement criteria • Implementation strategy • Consultation with stakeholders.

	General Comments	DMP Response
	<p>Interactions between the Commonwealth & Western Australian Governments</p> <p>Consistency of regulation across the three regulatory zones in Western Australia (including onshore areas, areas within three nautical miles of the coastline and areas beyond the three nautical mile mark as shown in Figure 2) is critical for providing an efficient regulatory framework for petroleum activities. While [Petroleum/mining industry representative body] recognises that these three zones are regulated by two separate bodies, consistency should be a key consideration in the design of any regulations impacting these areas.</p> <p>The importance of this consistency was recognised by the State/Territory/Federal Governments as a means of addressing the numerous Acts, directions and regulations relating to offshore safety. As noted in the nine principles for offshore regulation agreed by the Ministerial Council on Mineral and Petroleum Resources: “a consistent national approach to offshore safety regulation in both Commonwealth and State/NT waters is essential for the most cost-effective delivery of safety outcomes in the offshore petroleum industry.”⁴ Such an approach provides industry with certainty by ensuring that the rules for operating are the same regardless of where an activity might occur.</p> <p>Interactions between Western Australia and other States/Territories</p> <p>It is important to consider how Western Australia’s RMA regulations will sit relative to other jurisdictions and whether they reflect leading practice in Australia. As noted by the Standing Council on Energy and Resources “a strong, consistent and harmonised leading practice regulatory regime will assist in the sustainable development of the industry.”⁶ When considering the specific case of CSG, the SCER noted that:</p> <p><i>“The identification of leading practices provides a robust basis for the development and refinement of legislation, regulations, policies and practices. Importantly it provides a consistent approach across jurisdictions to managing the development of natural gas from coals seams and ensures a level of certainty for stakeholders and the industry. . . Ultimately, the application of the leading practices by governments through a national harmonised regulatory framework supported by industry practices will build community confidence in the operation of the industry and deliver a balanced message about the available opportunities and potential risks in the development of natural gas from coals seams”⁷</i></p> <p>In preparing this submission, [Petroleum/mining industry representative body] reviewed regulatory regimes across the country and found that the proposed RMA regulations will be consistent with other resource management regimes in Australia.</p> <p>FINDING 4 – The introduction of the proposed RMA regulations is expected to deliver a consistent approach to resource management as in other Australian jurisdictions.</p>	<p>The description of the environment must provide information on:</p> <ul style="list-style-type: none"> • Climate and meteorology • Vegetation, flora and fauna • Geology, land features and soils • Hydrogeology and hydrology • Cultural heritage, social amenity, and impacts on other land users • Any other environmental aspects relevant to the proposal. <p>Resource Management and Administration Regulations</p> <p>The proposed PGER(RMA) Regs will also follow a risk-based management regime in the management of well activities by providing for the orderly exploration for, and production of, petroleum and geothermal energy resources by identifying, monitoring, mitigating and otherwise dealing with well integrity hazards and existing risks for the well.</p> <p>COMMONWEALTH PETROLEUM REGULATIONS</p> <p>The WA petroleum regulations mentioned above were each drafted using their comparable Commonwealth Offshore Petroleum Regulations as the model but with the addition of specific “onshore” requirements to ensure a consistent approach and application in the regulation of the petroleum industries across Australian jurisdictions. Geothermal provisions, which are also included, follow the same approach as for petroleum.</p> <p>The PGER(RMA) Regs were drafted using the Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011.</p> <p>The PGER(MoS) Regs were based on the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 and the PGER(Env) Regs were based on the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.</p>
332	<p>Petroleum company] would encourage the Department of Mines and Petroleum to continue work in achieving harmonisation of regulatory frameworks and guidelines across State and Commonwealth jurisdictions.</p>	<p>Refer to response for comment 436.</p> <p>While acknowledging that harmonisation is important, WA’s administration of the onshore area and coastal waters in the PGER(RMA) Regs differs where necessary to address specific WA requirements.</p>

	General Comments	DMP Response
333	[Petroleum/mining industry representative body] supports the need for a holistic resource management regulatory framework, integrated with safety and environmental frameworks, with common approach to risk management where these are recognised as best practice.	Comment noted
334	In the current RMA regulation draft, there does not appear to be clear relationship between the well management plans and environmental plans (required to be prepared under the PGER <i>Environment</i> 2014 regulations). DAFWA considers that the RMA plans should have an explicit requirement in the Schedules to meet the outcomes in the environmental plan. This relationship is important as approvals under the draft regulations will be 'lawful authority'. If a petroleum company can show that it is operating in accordance with the law, PGER Act approval could be a 'complete defence' to charges under the <i>Environmental Protection Act 1986</i> .	<p>There will be some interaction between the WMPs and EPs due to the need for these to be approved before any well activity can commence. However, these plans are quite separate as they are for different purposes.</p> <p>There is no need that "RMA plans should have an explicit requirement in the Schedules to meet the outcomes in the environmental plan" as any breach of or non-compliance with the EP will mean that a petroleum and geothermal activity will not be able to be continued.</p>
335	<p>As the legislation currently sits, best practice is encouraged through the PAGER (Environment) Regulations and associated guidance material. Given the direct linkage from loss of well integrity to impacts to health, safety and environment, consistent language and style is recommended for all subsidiary PAGER legislation. For example, incorporation of an implied definition of ALARP along the lines of the PAGER (Environment) Regulations, as a minimum, or modification of the "practicable" definition from the <i>Mines Safety and Inspection Act (MSIA), 1994</i> is recommended (see below).</p> <p>PAGER (Environment) Regulations: Preliminary, r3, Object of regulations: The object of these regulations is to ensure that any petroleum activity or geothermal activity carried out in the State is -</p> <ul style="list-style-type: none"> (a) carried out in a manner consistent with the principles of ecologically sustainable development; and (b) carried out in accordance with an environment plan that- <ul style="list-style-type: none"> (i) demonstrates that the environmental impacts and environmental risks of the activity will be reduced to as low as is reasonably practicable; and (ii) has appropriate environmental performance objectives and environmental performance standards; and (iii) has appropriate measurement criteria for determining whether those objectives and standards have been met. 	Refer to response for comment 331.

General Comments	DMP Response
<p><i>MSIA, 1994, Section 4, Terms used:</i></p> <p>practicable means reasonably practicable having regard, where the context permits, to -</p> <ul style="list-style-type: none"> (a) the severity of any potential injury or harm to health that may be involved and the degree of risk of such injury or harm occurring; and (b) the state of knowledge about- <ul style="list-style-type: none"> (i) the injury or harm to health referred to in paragraph (a); and (ii) the risk of that injury or harm to health occurring; and (iii) means of removing or mitigating the potential injury or harm to health; and (c) the availability, suitability, and cost of the means referred to in paragraph (b)(iii); <p>The RMAA Guidelines and Guideline for Preparation of the Environmental Plan (EP) explain practicability in terms of practicality. For example, the following reference to ALARP is also used in the RMAA Guidelines. In both examples, there is no further attempt to overtly refer to international best practice or adoption of the ISO Standard 310000: 2009 Risk Management. "The EP regime aims to reduce environmental risks and impacts of petroleum activities, to a level which is 'as low as reasonably practicable' (ALARP). It is important to note that what is considered practical will evolve over time as technology, best practice and expertise improve. Operators should have a mechanism in place to monitor improvements in technology and practices" (DMP, 2012, Guidelines for the Preparation and Submission of an Environment Plan, Available http://www.dmp.wa.gov.au/documents/ENV-PEB-177.pdf. Accessed 31/3/14, page 8).</p> <p>It is considered reasonable to use similar language and approach across the suite of PAGER statutes and guidance material, with respect to improved technologies and standards as time progresses. The following paragraphs provide strong example for use in the RMAA Guideline, as a minimum.</p> <p>"This EP regime is in line with the 1992 Council of Australian Governments (COAG) Ecologically Sustainable Development principles, which encourage continuous improvement in environmental performance and best practice environmental management. This regime also encourages petroleum operators to employ innovative and effective environmental protection measures that are tailored to their specific circumstances to achieve superior environmental practice and outcomes." (DMP, 2012, Guidelines for the Preparation and Submission of an Environment Plan, Available http://www.dmp.wa.gov.au/documents/ENV-PEB-177.pdf. Accessed 31/3/14, page 8). "An acceptable EP must identify environmental risks and effects, establish specific performance objectives and standards, including measurement criteria to assess performance against those standards, and incorporate an IS to achieve those standards" (DMP, 2012, Guidelines for the Preparation and Submission of an Environment Plan, Available http://www.dmp.wa.gov.au/documents/ENV-PEB-177.pdf. Accessed 31/3/14, page 10).</p>	

	General Comments	DMP Response
336	<p>Linkages with other OMP Acts and regulations. The development of separate regulations consisting of the Environmental Regulations and the draft RMA regulations with their associated guidelines, to address different aspects of the petroleum and geothermal activities is supported by the [State Government Agency].</p> <p>However, in recognising that the Environment Regulations were introduced in 2012, and that the RMA regulations are currently being developed, the [State Government Agency] believes that while the linkages between the respective regulations exist they are not always easy to determine. This could impact on how these are to be applied by the proponent and be administered by Government where protection of water resources is concerned.</p> <p>The [State Government Agency] understands that the DMP is working to clarify the linkages between these two regulations and the [State Government Agency] is willing to work with DMP on addressing this. For example, consideration should be given to requiring proponents to develop Environmental Plans that detail all aspects of a development linking the Environmental Regulations requirements with the RMA regulations, increasing regulatory efficiency and possibly reducing the follow on reporting requirements of proponents.</p>	<p>Refer to response for comment 331.</p>
	Fracking	
337	<p>I emphatically state that we must keep WA free from all shale gas mining activities including fracking.</p>	<p>DMP and its predecessors have been regulating Western Australia's oil and gas sector for more than 50 years and, consequently, Western Australia has a comprehensive regulatory framework in place for exploration and production in the petroleum industry. In the past two decades technological advancements in drilling and hydraulic fracturing processes—also known as fracking—have enabled the development of significant natural gas resources in other jurisdictions that were previously considered unviable. Western Australia's shale and tight gas industry is currently in the early exploration and evaluation stages, with seven wells hydraulically fractured in the past 10 years.</p> <p>DMP understands there is heightened community interest about the development of its new gas industry for the state. Environmental issues have been raised in other jurisdictions and, understandably, questions are being asked in WA about potential impacts on communities and our environment. In recognising these concerns, Western Australia's regulatory framework is being continually reviewed and strengthened to incorporate technological and scientific advancements, and to address change in community values and expectations.</p> <p>DMP is part of an integrated multi-agency regulatory framework designed to protect public health, the environment, water resources and access to land. Other state government agencies and authorities contributing to the safe and responsible development of the shale and tight gas industry in Western Australia include the Departments of Environment Regulation, Health, Parks and Wildlife, Water and the Office of the Environmental Protection Authority.</p> <p>In 2011, DMP commissioned an independent review of the regulation of the shale and tight gas industry. Recommendations from the Tina Hunter review endorsed DMP's reform initiatives that are being progressively implemented. Other review recommendations include the need for increased transparency and enforceability within the state's regulations.</p>

Fracking	
	<p>The PGER(RMA) Regs are one part of Western Australia's regulation that ensures hydraulic fracturing is coordinated, transparent and risk based to ensure best practices are implemented to mitigate potential risks.</p> <p>Petroleum safety regulations came into effect in 2010, followed by petroleum environment regulations in August 2012. These regulations strengthen the obligations on industry in relation to water use management and chemical disclosure. As a result, Western Australia now has the strongest chemical disclosure requirement of any Australian jurisdiction and possibly the world.</p> <p>In 2011 DMP established an interagency shale and tight gas working group that is focused on the state's regulatory framework. The group has developed a regulatory framework document that provides an introduction to WA's regulation of this emerging industry.</p> <p>A copy is available here http://www.dmp.wa.gov.au/documents/Natural_Gas_from_Shale_and_Tight_Rocks_-_An_overview_of_Western_Australia_regulatory_framework.pdf</p> <p>A second more detailed regulatory framework document is being prepared and is expected to be available by the end of 2014.</p> <p>DMP is also developing formal administrative agreements with the Departments of Water and Health that include referral procedures for shale and tight gas activities proposed in proximity to a populated area or a known water resource. These agreements will reinforce existing regulatory processes, including international standards, well design and baseline and ongoing water monitoring. All hydraulic fracturing proposals are subject to the state's full environmental assessment processes.</p> <p>DMP has a memorandum of understanding with the Environmental Protection Authority that requires referral for proposals within 500 metres of an environmentally sensitive area or two kilometres of a town site. DMP is working with the Environmental Protection Authority to ensure this MOU is adequate.</p> <p>At the surface of shale or tight gas activity there are several key considerations the state government is addressing through the industry's regulatory framework. Included is the size of the footprint of an activity, private land access arrangements, water management, potential impacts to the environment and the protection of workers and the public. Given advancements in horizontal drilling techniques, it is estimated a typical shale or tight gas well site will require about two hectares of land. If a project actually advances to production, current predictions are that one well site may be required every 225 hectares or spaced out around every 4.5 kilometres within the discovered gas field. Balancing land use to ensure coexistence with other uses will be a priority for the state government and will involve other departments responsible for land-use planning. Approvals under the state petroleum act require that the land access agreements must be made with private landowners prior to a petroleum company receiving project approval from DMP. Industry and agricultural bodies are working together to review land access agreement processes to ensure they are conducted in a fair and equitable manner.</p>

Fracking	
	<p>Environmental impacts and occupational health and safety considerations must be addressed through environmental plans and safety management systems. These are submitted to DMP for assessment and approval. Every petroleum activity is subject to the state's regulatory approval process and where applicable the DMP refers these proposals to agencies such as the Department of Water. Additionally, any proposal which potentially has a significant impact on the environment must be referred to the Environmental Protection Authority for an independent assessment.</p> <p>Key sub-surface issues are also addressed in the regulatory framework including protection of underground water resources, well integrity, hydraulic fracturing and well decommissioning. The PGER(RMA) Regs reflect these considerations where petroleum titleholders will be required to adopt a whole-of-life approach to the construction, use and decommissioning of wells. These regulations include the requirement for international standards, well design, several layers of cement and steel casing when wells pass through aquifers, and the whole-of-life approach ensures that the actual wells are built to manage high pressure processes such as hydraulic fracturing. As previously mentioned, all fluids used down wells, including chemicals used during hydraulic fracturing, must be rigorously assessed and approved by my agency and then publicly disclosed. To ensure fluids and natural gas within a well do not leak into the outside rock formations or aquifers, operators must monitor well pressures to detect any potential loss. This monitoring is reviewed by DMP through a daily drilling report and other reporting mechanisms that we stipulate in our regulations. If a well is in close proximity to a water resource, baseline and ongoing water monitoring are also undertaken.</p> <p>The allocation and management of the state's water resource is managed by the Department of Water. During the hydraulic fracturing process, operators must monitor fracture trajectory to ensure the fracture is controlled and remains within the targeted gas-bearing rock formation. This monitoring is conducted using fluid pressure sensors and microseismic technology, and the operator is required to shut down operations immediately if any predetermined safe limit is exceeded. Once a well is producing natural gas or oil, titleholders are required to maintain the integrity of the well. DMP monitors this and also conducts routine inspections. At the end of production operators are required to decommission wells and return the site to its former condition as much as reasonably practicable. As part of this process wells must be decommissioned according to international standards. This includes cement plugs to block any potential migration pathways through for fluid or gas in the well.</p> <p>Natural gas is an important and significant energy resource that will continue to underpin our state's economy and energy security, ensuring Western Australia continues to have adequate, affordable and reliable energy will require the development of new natural gas fields onshore as well as offshore. Estimates suggest that WA's onshore shale and tight gas resources are significant, potentially twice what is already known offshore in the gas industry. This industry is still in its early stages of exploration and evaluation in Western Australia, so WA is in a very strong position to build upon the significant research and experience of other national and international jurisdictions that already have significant</p>

	Fracking	
		<p>shale and gas industries contributing to their economies. The responsible development of WA's shale and tight gas resource will bring both economic and social benefits, such as energy security, a cleaner energy mix, increased employment, regional growth and royalties. Consultation across the state has made it clear that many Western Australians are seeking more information about this industry in order to develop an informed opinion about the development of the shale and tight gas industry. A report released last year into shale gas development in Australia by the Australian Council of Learned Academies—ACOLA—states that to earn a social licence to operate, the shale gas industry must have transparent, adaptive and effective regulatory systems in place, backed by best practice monitoring and baseline surveys. That is certainly what we are working to achieve.</p> <p>In the gas industry around the world, the two technological advances involved in the process that released the gas from shale and tight rocks in America were horizontal drilling and fracturing. Both were technologies that had been in the industry for some time and had been used for a range of other purposes. Fracking has been used in Western Australia for a long period of time and there have been around 750 oil-related fracking jobs on Barrow Island over the last 40 years or so, because it is a formation where some of the oil came out easily but there was still a lot of oil in there and they were using it. Fracking has been used in Western Australia and around the world in oil fields as a stimulation method for a long time.</p> <p>Fracking uses a significant quantity of water so if you have a multiple fracking operation that is going to reuse water through that process, then that water has to be dealt with. It has chemicals in it, and when there is no transparency about what those chemicals are, people, rightly, have concerns.</p> <p>DMP will continue to address these issues in regular community engagement forums and aim to increase the transparency around regulation.</p>
338	<ol style="list-style-type: none"> 1) First and foremost, fracking (aka horizontal hydraulic slickwater fracturing) involves the use of millions of litres of water for every fracture. In WA's current climate and considering the increasing strain on our water sources from climate change, this amount of water use for an industry that is not necessary is unacceptable; water use in this context is not addressed in the draft regulations. 2) All chemicals used in the fracking process must be tested for safety particularly in relation to the environment in which they will be subjected and the effects of these substances mixing with naturally occurring volatile organic compounds in the formations in which they will be subjected MUST be studied, monitored and regulated. This is NOT included in the draft regulations and most certainly should be. 3) The multitude of significant environmental risks (and therefore also health and economic risks) associated with fracking and associated processes is not addressed in the draft regulations. 	Refer to response for comment 337.

	Transparency	
339	<p>Commitments within environment plans are confidential under the provisions of the <i>Petroleum and Geothermal Energy Resources Act 1967</i> ... which serves to highlight that there is no transparency within the regulatory framework and does not meet global best practice. This is also contrary to the recommendations made by the Independent Review Board that the regulatory processes should be strengthened and that legal enforceability need to be improved through developing new environmental and resource management regulations, and for key legislative amendments to:</p> <ul style="list-style-type: none"> • strengthen enforcements provisions for regulators; • mandate full disclosure of chemicals; and • mandate public release for approved Environment Management Plans. <p>The draft regulations do not address this major concern and I strongly recommend that all Environmental Management Plans are exempt and must not under any circumstances be considered permanently confidential information under:</p> <ul style="list-style-type: none"> • Part 9 – Release of technical information about petroleum and geothermal energy resources <ul style="list-style-type: none"> o Division 2 Classification of documentary information; and o Division 3 Release of documentary information. 	<p>The PGER(RMA) Regs continue DMP's move to strengthen transparency in the regulation of the petroleum and geothermal industries.</p> <p>Titleholders are currently required to comply with resource management and administration requirements as part of conditions imposed on the grant of a valid title application and also in the Schedule of Exploration and Production Requirements issued on the granting of a petroleum or geothermal title.</p> <p>Placing resource management and administration requirements in regulation will provide consistency, transparency and enable enforceability.</p> <p>Provisions for the full disclosure of chemicals for onshore petroleum and geothermal activities are contained in the PGER(Env) Regs.</p> <p>The PGER(Env) Regs also provide for the release of a detailed technical summary of the approved EP and these are published on the DMP website. Public release of the full EP is not possible under the current data release provisions in the PGERA67.</p> <p>However, DMP is moving to amend the petroleum legislation to provide for the release of EPs. It is anticipated that these amendments will be progressed in 2015.</p>
340	<p>Public access to information. Given the high level of community concern regarding the impacts of gas fracking it is absolutely essential that there is a very high level of transparency in the regulatory process. As such, the lack of transparency requirements in the draft regulations is totally unacceptable. All documents supplied by proponents for the purpose of achieving approvals, or in the process of complying with regulations, must be made publicly available. Environmental Management Plans and any other similar documents which require 'downstream approval' must be released for public comment PRIOR to approval.</p> <p>Hiding behind 'commercial in confidence' provisions is further evidence that the industry and the purported regulator have no interest in transparency or accountability.</p>	<p>Refer to response for comment 339.</p>
341	<p>[Petroleum/mining industry representative body] supports the need for visibility of how compliance with the regulations will be enforced.</p>	<p>Comment noted.</p>

	Penalties	
342	<p>Penalties are a key mechanism of ensuring compliance with regulations and it is noted that the RMA regulations reflect penalty levels that currently exist in the <i>Petroleum and Geothermal Energy Resources Act 1967</i>. It is also noted that DMP is currently undertaking a systematic review of the existing penalty mechanisms and that this will impact on the penalty levels in the RMA Regulations. [Petroleum/mining industry representative body] seeks clarification as to whether the penalty review will be completed prior to finalisation of the RMA regulations and whether the final draft of the regulations will reflect any findings of the penalty review. [Petroleum/mining industry representative body] would appreciate consultation on the final penalty rates to be set by the RMA regulations.</p> <p>RECOMMENDATION 6 – DMP to clarify the timing of the penalty review and potential impact on the draft RMA regulations.</p>	<p>The penalties in the Regulations are the maximum allowable under the PGERA67. DMP is committed to continuous improvement and this includes the suitability of penalties and offences contained in Departmental legislation.</p> <p>In 2013, the Department engaged Marsden Jacob Associates in October 2013 to prepare a resource paper to support the statutory penalties review by examining best practice penalties used in other jurisdictions. This paper presented a number of key findings and in December 2013 was circulated for stakeholder comment with the outcome that DMP will apply penalties under legislation administered by the DMP which are proportionate to the offence and in a consistent manner and also introduce corporate level penalties. Penalties across the board are expected to increase but this will not occur until completion of the review, further consultation, and legislative approval.</p> <p>In regard to the PGER(RMA) Regs the ultimate overriding penalty for a breach in the management of well activities will be the closure of the well.</p>
343	<p>Penalties for breaches throughout the draft are deplorable and do not reflect potential detrimental impacts of the fracking industry and its practices (eg. Reg 10). Fines should serve as a deterrent for breaching regulations yet such dismal amounts are like lunch money to this industry. The 'slap on the wrist' approach is totally unacceptable for an industry that carries with it such high risks and impacts. Substantially higher fines must be applied.</p>	<p>Refer to response for comment 342.</p>
344	<p>The DMP stated during the <i>Parliamentary Inquiry into the implications for Western Australia of hydraulic fracturing for unconventional gas</i> that the penalties for undertaking activities without approval, or for causing adverse impacts are currently under review. The [State Government agency] supports the review of the penalties to bring them in line with current industry and regulatory standards, including 'make good' provisions by a proponent.</p>	<p>Refer to response for comment 342.</p>
345	<p>The regulations must contain meaningful fines and Company Director's liability for any contamination of groundwater or other breaches that occur. The fines established by the regulations are totally inadequate as a disincentive to cause pollution or environmental harm. Penalties seem generally entirely petty and inappropriate – applies right through the document.</p>	<p>Refer to response for comment 342.</p>
346	<p>Penalties are totally inadequate. For example fining Santos \$1500 for a toxic spill polluting an aquifer with radioactive substances makes an absolute mockery of any responsible restitution. There needs to be realistic penalties which may make these companies much more careful in their operations, and to act as a deterrent against negligence, or high risk operations. Penalties must be factored into operating costs.</p>	<p>Refer to response for comment 342.</p>
347	<p>In view of the general transition in Australian regulatory jurisdictions toward outcome-based requirements as specified in plans or conditions and supported by regulatory enforcement if required, it may be appropriate to set monetary penalties for non-compliance at levels that provide a significant incentive for compliance rather than relying on the significant government resources required for ongoing compliance auditing and prosecution. It is unclear whether penalties of around \$10,000 (e.g. for undertaking a survey without approval, undertaking well operation other than in accordance with well management plan etc) would provide such an incentive, particularly if the monetary costs of compliance and/or benefits of non-compliance are significantly greater than these amounts.</p>	<p>Refer to response for comment 342.</p>

Penalties		
348	Perusal of the above draft regulations reveals an administrative system to cover the reporting of various aspects of mining and penalties for non-compliance. It may be true to say that the draft does what it has set out to do but the penalties outlined ie \$10,000, for non-compliance would be inconsequential to any large corporation. If 'the title holder does not control the well integrity hazard or risk' the penalty is still just \$10,000! The regulations refer to events such as 'significant discharge of fluids from the well; or damage to a natural resource' but just deal with the need to report this to the Minister, with no consideration for reparation of the damage. More serious 'significant events' are detailed but still only carry a penalty of \$10,000. We note the penalty for failing to furnish a monthly production report of activity is just \$7,000.	Refer to response for comment 342.
Harmony with Commonwealth		
349	[Petroleum company] would encourage the Department of Mines and Petroleum to continue work in achieving harmonisation of regulatory frameworks and guidelines across State and Commonwealth jurisdictions.	<p>The three sets of WA petroleum and geothermal regulations PGER(RMA) Regs; PGER(Env) Regs and PGER(MoS) Regs were each drafted using their comparable Commonwealth Offshore Petroleum Regulations as the model but with the addition of specific "onshore" requirements.</p> <p>This was to achieve, as far as practicable, a consistent approach and application in the regulation of the petroleum industries across Australian jurisdictions. Geothermal provisions, which are also included, follow the same approach as for petroleum.</p> <p>The PGER(RMA) Regs were drafted using the Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011.</p> <p>The PGER(MoS) Regs were based on the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 and the PGER(Env) Regs were based on the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.</p>
350	The Department of Mines and Petroleum continues to work with the Australian Government towards consistency of regulatory frameworks for offshore areas and across other Australian jurisdictions.	Refer to response for comment 349.
351	<p>It is noted that the Federal Government is also currently undertaking a review of offshore petroleum regulations, including those relating to well integrity, and [Petroleum/mining industry representative body] would encourage ongoing efforts to deliver consistency across jurisdictions.</p> <p>[Petroleum/mining industry representative body] understands that the RMA regulations will inform the development of regulations for areas within three nautical miles of the Western Australian coastline (currently regulated under the <i>Petroleum (Submerged Lands) Act 1982</i>), thereby delivering a high level of consistency across onshore and offshore areas (within three nautical miles of the coastline). Beyond three nautical miles (i.e. offshore areas that are regulated by the Commonwealth) [Petroleum/mining industry representative body] understands that DMP has sought to mirror regulation where possible. For operators this delivers a relatively high level of consistency across jurisdictions and should, in theory, facilitate efficient approvals and operations.</p>	Refer to response for comment 349.

Harmony with Commonwealth		
<p>However, it is noted that there are differences between the RMA regulations and the current offshore resource management regime in relation to the provision of data. It is important that, to the extent possible, timelines for the provision of data are consistent to ensure that an unnecessary burden is not placed on companies to maintain separate data tracking requirements for different jurisdictions. This will particularly be an issue in relation to survey data submissions, where a seismic survey crosses State and Commonwealth boundaries. The Commonwealth recently extended the timelines for survey data submissions in recognition of the longer times required for processing the greater amounts of data now collected through modern seismic acquisition. The difference in timelines is outlined below.</p>		
Data Type	Commonwealth	Proposed WA
Survey Data and acquisition report	18 months for all types	12/18/6 months depending on type of survey (2D/3D/any other)
Survey processing report and data	24 months for all types	12/18/6 months depending on type of survey (2D/3D/any other)
Survey interpretation report and data	36 months for all types	18/12 months depending on type of survey (seismic/any other)
<p>[Petroleum/mining industry representative body] recommends greater alignment between WA and Commonwealth data reporting timelines.</p>		
<p>RECOMMENDATION 1 – DMP and the Commonwealth Department of Industry and NOPSEMA should strive to deliver consistency of regulatory frameworks, including specifically in offshore areas.</p>		
<p>RECOMMENDATION 2 – Greater alignment between WA and the Commonwealth for data reporting timelines should be pursued.</p>		
<p>The timeframes in the table for survey acquisition reports and date in regulation 76 has been amended from 18 months to align them with the timeframes in the equivalent Commonwealth OPGGS (RMA) Regulation 7.16.</p> <p>The timeframes in the table for survey processing reports and date in regulation 77 has been amended to “24 months” to align them with the timeframes in the equivalent Commonwealth OPGGS (RMA) Regulation 7.17.</p> <p>The timeframes in the table for survey interpretation reports and date in regulation 78 has been amended to “30 months” to align them with the timeframes in the equivalent Commonwealth OPGGS (RMA) Regulation 7.18. Please note that the timeframe for Commonwealth OPGGS (RMA) Regulation 7.18 is 30 months not 36 months.</p> <p>All three of the Commonwealth regulations changed in 2013 after drafting of the PGER(RMA) Regs commenced.</p>		

	Best practice in resource management	
352	<p>The Independent Review Board has recommended that the regulatory processes should be strengthened and that legal enforceability need to be improved through developing new environmental and resource management regulations, and for key legislative amendments to:</p> <ul style="list-style-type: none"> • strengthen enforcements provisions for regulators; • mandate full disclosure of chemicals; and • mandate public release for approved Environment Management Plans. 	<p>Comment noted. These findings are currently being investigated by government. DMP has addressed the 1st and 2nd dot points and is moving to address the 3rd dot point. Refer to response for comment 339.</p>
353	<p>Since legislation defines the lowest acceptable standards, or basic requirements, it is imperative that new legislation clearly defines and requires best practice. This will also serve to satisfy the sensitivity of communities to industrial impacts on public health and well-being.</p>	<p>Refer to response for comment 352.</p>
354	<p>[Petroleum/mining industry representative body] supports the adoption of an objective-based regime through the revised RMA regulations as consistent with international best practice with regard to resource management and specifically well design and construction. This submission to the draft RMA regulations incorporates a review of international and national regulatory developments and analyses in relation to contemporary best practice for resource management and particularly well integrity. In general, the RMA regulations appear to be consistent with recognised leading practice worldwide.</p> <p>An Industry View of Best Practice Regulation for Resource Management</p> <ul style="list-style-type: none"> • Finding 1: Experience and evidence demonstrates that DMP's proposed shift to objective-based regulation will produce a regulatory regime which fosters innovation and continuous improvement in risk management for petroleum activities in Western Australia. • Finding 2: Requiring the titleholder to demonstrate the existence of management systems and processes that will mitigate risk to ALARP and deliver safe and sustainable operations is an appropriate objective of the RMA regulations, including ensuring well integrity throughout the life cycle of a well. <p>Adoption of International Best Practice for Well Management</p> <ul style="list-style-type: none"> • Finding 5: The proposed RMA regulations reflect contemporary best practice in relation to well integrity. <p>AN INDUSTRY VIEW OF BEST PRACTICE REGULATION FOR RESOURCE MANAGEMENT</p> <p>[Petroleum/mining industry representative body] supports strong and independent regulation that sets an objective and science based framework for reducing risk while providing certainty to industry. It is [Petroleum/mining industry representative body's] view that this is achieved by delivering regulation that is based on the following broad principles:</p> <ul style="list-style-type: none"> • have a clear purpose and net benefit; • underpinned by sound science and evidence; 	<p>Refer to response for comment 352.</p>

Best practice in resource management

- objective and risk-based regulation rather than the setting of prescriptive and often minimum standards – this allows a flexible and dynamic approach adapting to changing circumstances (technologies, science, industry practice, environments) and also promotes continuous improvement and a focus on managing activity/environment specific risks at the source of risk by the owner of the risk;
- involve streamlined, transparent and efficient regulatory assessment and approval processes;
- be enforced by an independent and competent regulator through a consultative and iterative process that is timely and efficient;
- be supported by guidance on regulatory expectations;
- maintain broad consistency across regulation and over-time to increase certainty and global competitiveness and thereby facilitate further business investment; and
- establish “one stop shop” reporting responsibilities so that industry has clear reporting requirements and a single regulator to deal with both within WA and also encompassing Commonwealth requirements.

FINDING 1 – Experience and evidence demonstrates that DMP’s proposed shift to objective-based regulation will produce a regulatory regime which fosters innovation and continuous improvement in risk management for petroleum activities in Western Australia.

FINDING 2 – Requiring the titleholder to demonstrate the existence of management systems and processes that will mitigate risk to ALARP and deliver safe and sustainable operations is an appropriate objective of the RMA regulations, including ensuring well integrity throughout the life cycle of a well.

OF A CONTEMPORARY RESOURCE MANAGEMENT REGIME

Resource management for the petroleum sector seeks to ensure the safe and economic extraction of hydrocarbons, including through the proper management of well activities. Operations that employ high standards of well integrity will ensure that activities are safe and environmentally sustainable over the long term. [Petroleum/mining industry representative body] views well integrity, and how regulation ensures best practice well operations, as one of the fundamental components of the RMA regulations.

THE IMPORTANCE OF WELL MANAGEMENT

Design and Construction – A well must be designed, commissioned, constructed, modified/ altered, equipped, operated, maintained, suspended and abandoned to ensure gases and fluids are contained and well integrity is ensured throughout the life cycle of a well. The design and construction of a well must include the ability to apply intervention measures to bring the well under control in the event of an unplanned event such as a kick or a loss of containment.

Best practice in resource management

The design and construction of a well is traditionally governed by a well management plan, which is approved prior to the commencement of operations. The WMP needs to demonstrate that the proposed critical barriers, performance standards and measures are sufficient for managing well integrity hazards and risks for all of the stages of the well life cycle and maintaining well integrity.

A well maintenance and inspection program is developed to ensure that each well continues to operate as designed (which must include any alterations/modifications to the design over the well life cycle and robust change management processes and record keeping) and that the integrity of the critical barriers will be maintained over the working life of the well.

Regulation of Activities – For complex, dynamic and highly technical activities such as oil and gas exploration and production, it is essential that the primary responsibility for managing the risks lies at the point of operations and not with the regulator. In addition, regulation should ensure that operators strive for ‘continuous improvement’ and not minimum compliance. Such an approach ultimately seeks to prevent major accident events and ensure the hydrocarbons are contained either in a well or a process plant/facility.

Regulation should impose a safety and health duty on the titleholder so that risks to the health and safety of persons at or near a facility and risks to the environment (including from the well, any unplanned release from the well, or anything in the connecting geological formation) are ALARP. Regulation should also require the titleholder to ensure that any risks are minimised to ALARP not just through operations, but also after a well has been decommissioned and a site is rehabilitated.

On this basis, key questions in relation to the proposed RMA regulations include whether they reflect leading practice and seek ALARP risk mitigation, whether they are workable for industry and whether they are likely to build public confidence.

ADOPTION OF INTERNATIONAL BEST PRACTICE FOR WELL MANAGEMENT – In addition to the fundamentals of contemporary well design and integrity, a number of Australian and international reviews have proposed additional considerations for improving best practice in petroleum operations. As much as possible, the introduction of the RMA regulations should take account of the extensive research into well integrity over the last few years. Provided at Attachment 1 is an [Petroleum/mining industry representative body] assessment of the international literature and research on well management and its relevance to the proposed RMA regime.

Best practice in resource management		
FINDING 5 – [Petroleum/mining industry representative body] is satisfied that the proposed RMA regulations reflect contemporary best practice in relation to well integrity.		
Source	Recommendation/Finding	Comment
United Kingdom Government North Sea Regulations ¹⁰	Wells should be designed and constructed so that 'as far as is reasonably practicable', there can be no unplanned escape of fluids from the well; and risks to the health and safety of persons from it or anything in it, or in strata to which it is connected, are as low as is reasonably practicable.	Reflected in draft RMA regulations.
International Energy Agency – Golden Rules for a Golden Age of Gas ¹¹	Put in place robust rules on well design, construction, cementing and integrity testing as part of a general performance standard that gas bearing formations must be completely isolated from other strata penetrated by the well, in particular freshwater aquifers Consider appropriate minimum-depth limitations on hydraulic fracturing to underpin public confidence that this operation takes place only well away from the water table.	Proposed to be covered by the RMA regulations. Not appropriate in an objective-based framework. The onus should be on the Operator to justify why the minimum drilling distance proposed is appropriate and how risks will be managed to ALARP. The regulator should be responsible for assessing whether the operator's logic is sound.

Best practice in resource management			
Source	Recommendation/Finding	Comment	
UK Royal Society – Shale gas extraction in the UK: a review of hydraulic fracturing ¹²	<p>Operators should carry out goal based risk assessments according to the principle of reducing risks to ALARP.</p> <p>Risk assessments should be submitted to the regulators for scrutiny and then enforced through monitoring activities and inspections.</p>	<p>Proposed to be covered by the RMA regulations.</p> <p>Proposed to be covered by the RMA regulations.</p>	
International Gas Union – Shale Gas: The Facts about the Environmental Concerns ¹³	<p>Quality assurance programs to ensure proper well-bore design, construction practices are followed and well integrity testing is undertaken during the life of the well.</p> <p>Minimum well depths be set in order to ensure that hydraulic fracturing takes place a significant distance from water aquifers.</p>	<p>Proposed to be covered by the RMA regulations.</p> <p>Not appropriate in an objective-based framework. The onus should be on the Operator to justify why the minimum drilling distance proposed is appropriate and how risks will be managed to ALARP. The regulator should be responsible for assessing whether the operator's logic is sound.</p>	
Australian Council of Learned Academies – Engineering Energy: Unconventional Gas Production ¹⁴	<p>Adoption of sensor technology to accurately and closely monitor the hydraulic fracturing process</p> <p>It is important to conduct baseline surveys of sites where drilling is to be undertaken, especially in relation to groundwater.</p>	<p>As part of an objective-based approach, [Petroleum/mining industry representative body] would expect that DMP will be looking for Operators to demonstrate knowledge of the geology and how risks will be monitored and managed through the hydraulic fracturing process.</p> <p>Proposed to be covered by the RMA regulations.</p>	

Best practice in resource management			
Source	Recommendation/Finding	Comment	
Dr Tina Hunter – Regulation of Shale, Coal Seam and Tight Gas Activities in Western Australia ¹⁵	<p>The WADMP ensure the inclusion of management of produced water from abandoned wells in the proposed Environment Regulations and the Resource Management Regulations.</p> <p>The PAGERA requires amendment to incorporate field abandonment. The requirements for field abandonment should also be incorporated into the proposed Environment Regulations and the Resource Management Regulations.</p> <p>The WADMP develop a standard petroleum and land access process overview for the abandonment of a field.</p>	<p>As part of an objective-based approach, [Petroleum/mining industry representative body] would expect that DMP will be looking for Operators to demonstrate appropriate management of all by-products from drilling and hydraulic fracturing.</p> <p>Proposed to be covered by the RMA regulations.</p> <p>[Petroleum/mining industry representative body] understands that DMP proposes to develop an overview of this process upon completion and implementation of the RMA regulations.</p>	
Dr Tina Hunter – Minimising the impact of shale and tight gas projects in Western Australia: an assessment of the existing regulatory framework ¹⁶	DMP should require a Well Integrity Response Plan (WIRP).	As part of an objective-based approach, [Petroleum/mining industry representative body] would expect that DMP will be looking for Operators to demonstrate leading practice well design, construction, monitoring and loss of well control response.	

	Risk Management/ALARP	
355	<p>At the present time the [State Government agency] has limited powers for involvement at the approval stage. The [State Government agency] therefore supports the application of the Precautionary Principle, which is embedded in the new Public Health Bill, to eliminate or reduce any public health risks. The Precautionary Principle states that if there is a public health risk, lack of scientific certainty should not be used as a reason for postponing measures to prevent, control or abate that risk. And that in the application of the principle, decision making should be guided by:</p> <p>a) a careful evaluation to avoid, where practicable, harm to public health; and</p> <p>b) an assessment of the risk-weighted consequences of the options.</p> <p>We understand that the DMP uses the risk management method and terminology of As Low As Reasonably Practical (ALARP). Some of the differences in terminology arise from different professional backgrounds (eg: engineering vs public health). The net result though of both the Precautionary Principle and the ALARP Principle, if applied conscientiously within a robust and transparent regulatory framework, is likely to be very similar.</p> <p>To further promote this transparency, [State Government agency] proposes that all regulations include an adequate definition of ALARP. While there are many references to ALARP in the PAGER Act there is no explicit definition in the Act or in any of the subsidiary legislation or guidance material. For example, it is noted that the draft PAGER RMAA Regulations, 2014 allow for the Minister to halt operations following loss of well integrity. This is likely to have the maximum impact on a company and is therefore the most effective deterrent to poor maintenance and management of wells. Without adequate definition however, the inspectorate/minister will have difficulty in proving the elements for such action to be taken.</p> <p>If there is significant negative impact the prosecutor may be unable to prove a case of negligence due to open legislation. In such a circumstance, the community could end up bearing the cost of remediation of contamination of an environmentally sensitive resource.</p> <p>In terms of longer term indirect effects on the climate, the Australian Council of Learned Academies (ACOLA) recently undertook an independent review of unconventional gas production from shale in Australia and reported that a single unit of methane released to atmosphere has 25 times the global warming potential of a single unit of carbon dioxide gas (ACOLA, 2013). Hence good oil-field practices must ensure that the release of methane is minimised in order to maximise the use of the resource while minimising the costs to the environment and public health. The <i>PAGER Act, 1967</i> defines good practice in section 5(1) and this is further explained by the Explanatory Notes for the Consultation Draft of the Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations, 2014) as:</p> <p>“all those things that are generally accepted as good and safe in the carrying on of exploration for petroleum, or in the operations for the recovery of petroleum, as the case may be”. The underlying concepts of conservation, energy efficiency and maximum ultimate recovery are inherent in this definition”, (page 1).</p>	<p>The PGER(RMA) Regs require the submission of a WMP which:</p> <ul style="list-style-type: none"> • is appropriate for the nature and scale of the activity or proposed use; • demonstrates that the drilling impacts and risks of the activity will be ALARP; • provides for appropriate well management performance objectives, standards and measurement criteria; and • complies with the Act, the relevant Petroleum (RMA) Regulations and applicable State statutes. <p>The phrase “as low as reasonably practicable” means that the titleholder has to show, through reasoned and supported arguments, that there are no other practical measures that could reasonably be taken to reduce risks further. The concept of ‘reasonably practicable’ is central to a risk-based regime as it allows operators to set goals for their own performance rather than following prescriptive requirements. It also allows DMP to accept or reject the operator’s arrangements under the WMP.</p> <p>This flexibility is a great advantage but it can be challenging because it requires people to exercise judgement with respect to how they are going to manage their risks. In the great majority of cases, a decision can be made by referring to existing ‘good practice’ that has been established. However, for complex situations it may be difficult to reach a decision on the basis of ‘good practice’ alone. There may be some situations, for example in the case of new technology, where there is no relevant ‘good practice’ that can be followed. In these situations other decision-making techniques need to be applied to inform our judgment.</p> <p>As Low As Reasonable Practicable (ALARP)</p> <p>The term As Low As Reasonably Practicable (ALARP) comes from the United Kingdom and North Sea offshore oil and gas industry as a direct consequence of the Cullen Inquiry findings in to the 1988 Piper Alpha offshore oil and gas platform explosion and fire, in which 167 fatalities were incurred. The basic principle holds that the residual risk should be ALARP, but all activities accept a risk threshold that can be described as a judgement of the balance of risk and social benefit. However, future risk must always be further diminished by applying learnings and developments of past operations.</p> <p>Using “reasonably practicable” allows goals to be set for duty-holders, rather than being prescriptive. This has significant operational advantages and drawbacks. Deciding whether a risk is ALARP can be challenging because it requires operators and regulators to exercise judgement. In the great majority of cases, the regulator can decide by referring to existing ‘good practice’ that has been established by a process of discussion with stakeholders to achieve a consensus about what is ALARP. For high hazards, complex or novel situations, regulators and operators can build on good practice, using more formal decision making techniques, including cost-benefit analysis, to inform final judgement.</p> <p>Ensuring a risk has been reduced ALARP is about weighing the risk against the costs needed to further reduce it. The decision is weighted in favour of health, safety and the environment because the presumption is that the operator is responsible to implement the</p>

Risk Management/ALARP		
		<p>risk reduction measure. To avoid incurring significant costs, the operator must be able to demonstrate that it would be grossly disproportionate to the benefits of risk reduction that would be achieved. Thus, the process is not one of balancing the costs and benefits of measures but, rather, of adopting measures except where they are ruled out because they involve grossly disproportionate costs.</p> <p>Extreme examples might include:</p> <ul style="list-style-type: none"> • An operator to spend \$1m to prevent three staff suffering minor bruising is disproportionate; but • An operator to spend \$1m to prevent a major facility explosion capable of killing or injuring 100 people is proportionate. <p>In reality many decisions about risk and the controls that achieve ALARP are not so obvious. Factors come into play such as ongoing costs set against remote chances of one-off events, or daily costs and supervision time required to ensure that, for example, employees wear ear protection set against a chance of developing hearing loss at some time in the future. It requires judgment.</p>
356	It is [Petroleum/mining industry representative body's] view that the adoption of regulatory frameworks that focus on the minimisation of risk are critical for highly technical industries such as the petroleum sector. In this context, the concept of ALARP is well-established in petroleum regulation and also under general duty of care workplace health and safety law applying across Australia. For oil and gas industry activities/operations, ALARP requires a titleholder (or operator) to show through reasoned and supported arguments, that there are no other practical measures that could reasonably be taken to reduce risks further.	Comment noted
357	The supporting guideline for the RMA regulations that has also been released to support the draft regulations indicates that the well management plan aims to reduce risks and impacts of petroleum (including geothermal) drilling activities to a level which is as low as reasonably practicable (ALARP). One of the risks and impacts that require reducing relate to water resources. Consideration should be given to developing guidelines specifying how the DMP will assess applications using ALARP and also to identify how minimum acceptable outcomes will be applied. This is necessary as reducing the impacts to the water resources to an ALARP level may still not meet minimum acceptable requirements for protection of a water resource.	<p>The need for clear guidelines and supplementary information to provide guidance to assist the petroleum and geothermal industries title holders with compliance with the requirements of the PGER(RMA) Regs is noted and agreed. Recognising the principles of good regulation, DMP commits to ensuring that Guidelines and supplementary information are:</p> <ul style="list-style-type: none"> • effective and efficient in practice, • being implemented consistently and • reviewed with stakeholder involvement. <p>Revisions of these Guidelines will be made available to the public on the DMP website www.dmp.wa.gov.au</p>
Regulatory Burden/Impact on activities/Duplication		
358	The regulator must ensure that duplication of information provided to various branches of Government is minimized (e.g. chemical volumes used for well activities and ground water baseline studies are requirements of both the Environmental Plans and the RMA) In my view there will be a significant slowdown in onshore activity as these regulations are bedded in, and while industry retrospectively adjusts to the new regulations for existing projects.	The purpose of the PGER(RMA) Regs is to introduce a robust petroleum and geothermal regulatory regime to WA. The Regulations were drafted incorporating good regulatory design principles, which are important in minimising unnecessary burdens on business and the community.

	Regulatory Burden/Impact on activities/Duplication	
	<p>I also note that the compliance requirements are significant, and will take significantly more human resources (time and cost) to ensure they are met by both the department and industry. This cost will ultimately be borne by the industry and in the case of successful development projects, the consumer, though higher hydrocarbon prices to achieve a satisfactory return on investment.</p>	<p>These are:</p> <ul style="list-style-type: none"> • simplifying regulation • having clear objectives • reducing levels of prescription, and • minimising unnecessary inconsistencies between jurisdictions <p>The drafting process also included referral to the Regulatory Gatekeeping Unit (RGU) at the Department of Finance which administers the Regulatory Impact Assessment (RIA) process in Western Australia. The RGU assists State government agencies in achieving best practice in accordance with RIA requirements, and in monitoring, assessing and reporting on compliance with those requirements.</p> <p>The RGU process applies to all new legislative proposals and has been designed to encourage careful consideration, at an early stage, of the fundamental question of whether regulatory action is required or if policy objectives can be achieved by alternate measures, with lower costs for business and the community.</p> <p>The RIA process is designed to improve the quality of regulation by ensuring that the decision maker is fully informed when approving new and amending regulatory instruments. RIA is aimed at ensuring rigorous analysis of regulatory proposals, effective and appropriate consultation, and transparency of process. It also provides an early warning to the Government of unintended consequences of regulatory proposals.</p>
359	<p>Given the substantial benefits to the national economy, regulation of the oil and gas industry should be designed and implemented to promote the necessary high standards of performance and risk management for equipment integrity (wells and facilities), safety, health and environment without imposing unnecessary regulatory burdens.</p> <p>In Western Australia, as across all of Australia, the high cost of doing business and declining international competitiveness has also focussed government attention on ensuring that regulation does not provide a disincentive to investment, and driven a regulatory reform agenda to remove obsolete regulation and reduce duplication, inconsistency and complexity. For the community, effective regulation sets clear and transparent standards that reflect community expectations and provides an enforcement solution for non-compliance.</p> <p>The importance of this balance was recently noted by the Standing Council on Energy and Resources:</p> <p><i>“Australian governments are focused on achieving a balance between developing a world-class industry, protecting the environment, water resources and human health while delivering opportunities and benefits to the Australian community.”</i></p>	<p>Refer to response for comment 358.</p>

	Transitional arrangements	
360	<p>Objective-based regulation is a complex system for regulating risk and implementation should carefully consider transitional arrangements addressing how the requirements of the updated regulatory framework will be communicated to industry and the public. It is critical that industry is closely consulted as part of this process.</p> <p>IMPLEMENTATION OF A CONTEMPORARY RESOURCE MANAGEMENT REGIME – [Petroleum/mining industry representative body] would encourage DMP to consider from an early stage how the RMA regulations will be implemented post-finalisation, including the use of guidelines, transitional arrangements and a clear communications strategy.</p> <p>GUIDELINES – [Petroleum/mining industry representative body] believes the objective-based approach underpinning the RMA Regulations should be better reflected in the Guidelines and that these should seek to articulate the Regulator’s expectations under the proposed regime. Comments on the Guidelines are provided at Attachment 3.</p> <p>TRANSITIONAL ARRANGEMENTS</p> <p>The replacement of the current prescriptive regulatory regime under the Schedule of Onshore Petroleum Exploration and Production Requirements 1991 with an objective-based framework under the RMA regulations, is a significant shift in the way that operators will prepare applications and how DMP will assess these applications. It is [Petroleum/mining industry representative body’s] experience that such a shift, which occurred with the introduction of NOPSEMA, will require an ongoing dialogue between government and industry so that operators and the regulator understand how activities can be managed through the new regulatory requirements.</p> <p>It is therefore suggested that DMP consider mechanisms for encouraging operators to transition to the new requirements, including workshops with industry to demonstrate how the structure and details of a Well Management Plan might change.</p> <p>[Petroleum/mining industry representative body] understands that implementation of the RMA regulations will be targeted for end-2014, although a specific date is not yet known. Clarification is sought as to whether there will be a transitional period through which applications that meet the requirements of the Onshore Schedule remain valid, while operators work towards adopting requirements consistent with the final RMA regulations. In addition, [Petroleum/mining industry representative body] urges DMP to ensure that any regulations that are developed for the <i>Petroleum (Submerged Lands) Act 1982</i> areas are provided an opportunity for public consultation.</p> <p>RECOMMENDATION 7 – The implementation of the RMA regulations should incorporate holding industry transition workshops to work through the issues identified in this submission and any other implications of adopting an objective-based regime for resource management.</p>	<p>The PGER(RMA) Regs have been amended to include a new Part 10 – Transitional provisions – to cover arrangements for existing surveys, well activities, and petroleum recovery operations following commencement of the PGER(RMA) Regs.</p> <p>Regulation 98 – Existing surveys – provides that existing surveys approved and undertaken prior to the commencement of these Regulations, do not need to comply with the requirements of Part 2 of these Regulations.</p> <p>Regulation 99 – Existing well activities – states that titleholders undertaking well activities approved prior to the commencement of these Regulations, will have 12 months from the commencement of these Regulations to submit an application for approval of a WMP under regulation 12(1).</p> <p>Regulation 100 – Existing recovery operations – provides that petroleum licensees undertaking petroleum recovery operations approved prior to the commencement of these Regulations, will have 12 months from the commencement of these Regulations to submit an application for approval of a FMP under regulation 43(1) or an application for approval to undertake recovery of petroleum without a FMP under regulation 58(1).</p>

Transitional arrangements		
	RECOMMENDATION 8 – DMP clarify whether a transitional period will apply that allows operators to submit well management plans in line with requirements under the Onshore Schedule, prior to the adoption of the RMA regulations.	
361	[Petroleum/mining industry representative body] supports the need for transitional arrangements to the new regulatory regime.	Comment noted
Public confidence/communication		
362	<p>Recommendation 3: The adequacy of resourcing and skill sets to make the shift to objective-based regulation should be considered in the design of the implementation program.</p> <p>Recommendation 4: It will be important that all stakeholders, particularly industry operators, gain a good understanding of the approach to be adopted by DMP to compliance activities associated with the shift to RMA regulations, including how DMP will assess if a well is constructed in accordance with an approved Well Management Plan (WMP).</p> <p>Recommendation 5: The public understanding of well integrity operating and regulatory practices should be enhanced by [Petroleum/mining industry representative body] and DMP (and potentially independent third party experts).</p> <p>Recommendation 9: DMP to ensure that any regulations that are developed for the <i>Petroleum (Submerged Lands) Act 1982</i> areas are provided an opportunity for public consultation.</p> <p>Recommendation 10: A communication program is undertaken by DMP to improve the understanding of the purpose and implications of the RMA regulations by all key stakeholders and the broader WA public.</p> <p>Recommendation 11: DMP to develop case studies, with assistance from industry, to articulate the assessment and approvals process to key stakeholders.</p> <p>The development of shale and tight gas projects worldwide has focussed significant attentions on the capability of regulatory frameworks to manage this part of the oil and gas industry, including in Western Australia. The challenge for regulators is to ensure that regulation balances the expectations of the various stakeholder groups.</p> <p>BUILDING COMMUNITY CONFIDENCE</p> <p>This section considers the extent to which the regulations reflect identified community expectations and will assist with delivering confidence in the regulatory regime.</p> <p>Compliance Activities</p> <p>Key to the effectiveness of an objective-based regulatory regime and how it can deliver public confidence is the capacity of the regulator to conduct thorough and timely assessments of regulatory submissions, including well management plans, and to monitor compliance with accepted standards through a targeted and risk based inspection program.</p>	<p>DMP has implemented a <i>Shale and Tight Gas Community Engagement and Communications Strategy</i> to guide community engagement and communications for the shale and tight gas industry to achieve positive community relation outcomes, and fair and balanced media coverage for this emerging industry in Western Australia.</p> <p>Specific objectives are to:</p> <ul style="list-style-type: none"> • Provide greater public and media understanding of the processes, opportunities and risks associated with shale and tight gas in a clear and open manner. • Educate the community and media about the economic and environmental benefits and risks. • Ensure that the community is kept informed of activity of this industry in Western Australia and that their issues and concerns are being noted, understood, and, if appropriate, acted on. • Through a variety of community engagement methods, provide an accessible process through which the community can contribute in a way that is convenient. • Through briefings and relationship building, position the department as a responsive, convenient and reliable and professional media liaison service, attracting greater clarifications for misinformation. • Achieve balanced media coverage to raise awareness of the sector and respond to and/or negate any negative coverage. • Maintain key stakeholder, media and community confidence in DMP as the regulator of operations to make sure that the State's oil and gas industry is managed responsibly and safely – for the workforce, the community and the environment. • Gain and maintain broad community support for shale and tight gas development. • Demonstrate that DMP has a robust across-government approach to the management of the shale and tight gas industry in Western Australia.

Public confidence/communication	
<p>Under an objective regime the regulator is not assessing applications against prescribed criteria but rather considering how well an operator has justified their assessment of the risks, why the mitigating strategies are appropriate and then ensuring compliance with these approved strategies. The adequacy of resourcing and skills sets to make the shift to objective-based regulation should be considered in the design of the implementation program.</p> <p>[Petroleum/mining industry representative body] also notes that there would be a benefit in lifting the visibility of DMP's processes which enforce compliance with the RMA regulations, including how DMP will ensure that a well is constructed, designed, operated, suspended and abandoned in accordance with an approved Well Management Plan.</p> <p>RECOMMENDATION 3 – The adequacy of resourcing and skills sets to make the shift to objective-based regulation should be considered in the design of the implementation program.</p> <p>RECOMMENDATION 4 – It will be important that all stakeholders, particularly industry operators, gain a good understanding of the approach to be adopted by DMP to compliance activities associated with the shift to RMA regulations, including how DMP will assess if a well is constructed in accordance with an approved Well Management Plan.</p> <p>Addressing Technical Concerns – Well integrity and 'failures'</p> <p>The RMA regulations will ensure that operators take a lifecycle view of well integrity and this should be accompanied by industry and government efforts to improve the community's understanding of the distinction between 'well failure' and 'barrier failure'. The term 'well failure' is often used to mean 'barrier failure', with groups opposed to the development of an onshore gas sector seeking out and promoting rare 'barrier failures' as 'well integrity failures'. As noted by the Society of Petroleum Engineers, "well integrity failure is where all barriers fail and a leak is possible."8 A 'barrier failure' is where one of the many barriers fail, with the next barrier providing isolation so that a leak path will not form. An investigation by the US Ground Water Protection Council (GWPC) in 2011 of wells in Ohio found that two wells from a sample of 34,000 had well construction issues. The GWPC also looked at wells in Texas, where they found that 21 wells in 187,000 had similar construction issues. The overriding majority of (instead of cement) and updated regulations.</p> <p>Building confidence in the regulations will require DMP to ensure that the public understand the regulatory framework and how it manages risks relating to 'well integrity failure'. It will be critical for government and industry to also work together to ensure clarity and consistency in relation to the use of 'barrier failure' and 'well integrity failure' terminology</p> <p>RECOMMENDATION 5</p> <p>The public understanding of well integrity operating and regulatory practices should be enhanced by APPEA and DMP (and potentially independent third party experts).</p>	<p>The following key messages have been endorsed:</p> <ul style="list-style-type: none"> • Western Australia's regulatory framework for hydraulic fracturing (fracking) is coordinated, transparent and risk-based, and is continuously being improved in response to new scientific, technological and social considerations. • WA's natural gas from shale and tight rocks industry is in the early stages of exploration with significant commercial production predicted to be about five to ten years away. • DMP understands the community has concerns about potential risks associated with hydraulic fracturing and the State Government is strengthening regulations and ensuring best practices are implemented to help mitigate such risks. • As the lead regulator, DMP is working with government, community and industry to improve our understanding of issues so that we are better able to address concerns. • DMP recognises the diverse environmental values across Western Australia and is strengthening its regulatory frameworks to ensure industry adopts high standards and practices that will help address community expectations. • DMP is working with other Government agencies responsible for upholding the State's values to protect public health, the environment, water resources and equitable land use – these include the Departments of Agriculture and Food, Environment Regulation, Heath, Parks and Wildlife, State Development and Water, and the Office of the Environmental Protection Authority (OEPA). • DMP has developed Memorandum of Understanding with some of these key agencies, including the OEPA and Water, and has also established an interagency working group to ensure updated legislation, regulations and guidelines are robust and address community values and expectations. • The State Government has undertaken to further strengthen its regulatory framework to ensure WA has world best practices in place ensure this developing industry is sustainable and safe. • Before drilling programs are approved, DMP assesses applications to ensure the program complies with the PGERA67 in accordance with State legislation relating to protecting public health, the environment and water resources. • DMP will ensure any future projects are assessed on a site-by-site, project-by-project basis with safety and environment auditors conducting inspections to check compliance with safety and environmental standards. • As part of the approvals process, companies are legally required to formulate an EP that risk assesses the potential impacts on groundwater, as well as flora and fauna. • All companies are required to submit a list of all chemicals to be used in hydraulic fracturing activity, which are published on the DMP website. These requirements are some of the strongest regulations in Australia.

Public confidence/communication	
<p>COMMUNICATION STRATEGY</p> <p>There is a high level of community interest in the resource management regulations, including within political parties, across government, petroleum companies and the community. The RMA regulations also offer a significant opportunity for demonstrating the State’s high regulatory standards to the public.</p> <p>Communication of regulatory requirements under the State’s proposed regulatory regime should form a key part of DMP’s implementation strategy.</p> <p>Statements from some conservation groups in Western Australia that the RMA regulations “do not manage the environmental risks of gas fracking”⁹ appear to misunderstand the purpose of the regulations and how they mitigate risk by working in concert with the environment and safety regulations. They also appear to favour a prescriptive regime which [Petroleum/mining industry representative body] considers to be a significant step backwards in terms of petroleum regulation, as this would ultimately place the liability for mitigating the risks arising from a petroleum activity on governments and not the title holder or well operator.</p> <p>However, this view does highlight the need to ensure that communication strategies in relation to the regulatory framework demonstrates how the various pieces of regulation (environment, safety and resource management) will interact. Equally important will be how these requirements are communicated to other regulatory agencies, who may not have previously been exposed to an objective-based and ALARP-focused regulatory regime.</p> <p>[Petroleum/mining industry representative body] would encourage DMP to ensure that communication to key stakeholders about the robust requirements of the regulatory regime applying to well activities, and including the interaction with the RMA regulations, is a focus of DMP’s implementation strategy for the regulations.</p> <p>As suggested earlier in this submission, DMP should consider developing a range of hypothetical case studies of exploration and production activities, including the whole-of-government assessment of the activities (i.e. assessment of the WMP, Environment Plan and Safety Management Plan), and whether this material could assist with better explaining the robust regulatory requirements and approvals process to the public.</p> <p>RECOMMENDATION 10</p> <p>A communication program is undertaken by DMP to improve the understanding of the purpose and implications of the RMA regulations by all key stakeholders and the broader WA public.</p> <p>RECOMMENDATION 11</p> <p>DMP to develop case studies, with assistance from industry, to assist with making the assessment and approvals process more transparent to key stakeholders.</p>	<ul style="list-style-type: none"> • The State is well positioned to learn from experiences in other jurisdictions and to adopt international best practice standards and further strengthen its robust regulatory system to ensure environment and communities are protected as this new industry is developed. • DMP is confident it can strictly regulate a shale and tight gas industry without compromising the environment or safety to successfully maximise possible future economic opportunities for all Western Australians.

Public confidence/communication		
363	[Petroleum/mining industry representative body] supports the need for public communication to build community confidence in onshore petroleum resource management.	Comment noted
364	Since legislation defines the lowest acceptable standards, or basic requirements, it is imperative that new legislation clearly defines and requires best practice. This will also serve to satisfy the sensitivity of communities to industrial impacts on public health and well-being.	Refer to response for comment 362.
Release of information		
365	<p>The draft regulations do not address this major concern (the public release of approved Environment Management Plans) and I strongly recommend that all Environmental Management Plans are exempt and must not under any circumstances be considered permanently confidential information under:</p> <p>Part 9 – Release of technical information about petroleum and geothermal energy resources</p> <ul style="list-style-type: none"> • Division 2 Classification of documentary information; and • Division 3 Release of documentary information 	<p>Regulations 82 sets out the type of information that is excluded information. Sub-regulation (2) details that information about the following is excluded information:</p> <ul style="list-style-type: none"> • technical qualifications about an instrument holder or an applicant for an instrument; • technical advice available to an instrument holder or an applicant for an instrument, and; • financial resources available to an instrument holder or an applicant for an instrument. <p>Regulation 83 prescribes the circumstances where documentary information is permanently confidential and regulation 82(3) lists specific documents that are excluded information.</p> <p>The PGER(Env) Regs currently provide for the release of a detailed technical summary of the approved EP and these are published on the DMP website. Public release of the full EP is not possible under the current data release provisions in the PGERA67. DMP is moving to broaden the information that can be released under the PGERA67. It is anticipated that these amendments will be progressed in 2015.</p>
366	We have not identified a specific regulation determining the disclosure of Geothermal Energy Recovery Development Plans. This may either be a flaw in the proposed regulations or the underlying Act may already prevent their disclosure. These plans should be revealed by the DMP rather than being deemed to fall within the definition of PCI by the Minister in concert with other provisions.	Regulation 82(3) lists specific documents that are excluded information. Geothermal Energy Recovery Development Plans, and revisions to these, were inadvertently not listed in the consultation draft of the PGER(RMA) Regs but have since been added.
Outcome-based regulation		
367	<p>We have consistently called for an ‘outcomes-based’ regulatory regime which clearly establishes the environmental outcomes that must be achieved (and the monitoring regime necessary to ensure compliance).</p> <p>Unbelievably, these draft regulations are silent about outcomes, instead taking a ‘risk-based’ approach which is potentially worse than the current prescriptive model.</p> <p>Reliance on standards such as ‘<i>industry best practice</i>’ and reducing risk to ‘as low as reasonably practicable’ is totally unacceptable.</p> <p>Using these standards as the basis for regulations does not offer any meaningful protection of the environment, groundwater and public health. Such measures cannot be used in place of rigorous outcome-based standards. Outcomes-based standards must apply. The regulations must stipulate exactly what the tolerable level of environmental impact</p>	<p>The proposed PGER(RMA) Regs will provide a risk-based and objective-based management scheme for the exploration for, and production of, petroleum and geothermal energy resources. A range of resource management and administration matters, are covered by the regulations, including WMPs for the approval of all drilling activities (including shale and tight gas), well integrity, notification and reporting of discovery of petroleum; FMPs and approvals of petroleum recovery.</p> <p>Regardless of whether these Regulations should be based on outcomes or objectives, they are a significant change from the current prescriptive regime under the <i>Schedule of Onshore Exploration and Production Requirements 1991</i>.</p> <p>The trend towards objective-based regulation in recent years means that governments have moved away from prescribing specific standards or procedures and, instead, have</p>

Outcome-based regulation		
	<p>is, whether that be pollution to groundwater, surface water, air emissions or clearing of native vegetation or disturbance to soil profile, subterranean fauna etc. The regulations must specifically prohibit ANY contamination of groundwater by gas fracking operations. The gas fracking industry has stated that gas fracking has never caused contamination of groundwater so this should not be resisted by industry.</p>	<p>emphasised achievement of the objectives of legislation, leaving it to businesses to determine how objectives are to be achieved. Regulation of the upstream petroleum sector has, at least in part, followed this trend.</p> <p>There have been two main drivers of this trend. First, in industries subject to rapid technological change, prescriptive regulation is likely to become quickly out-dated, potentially becoming counterproductive in achieving greater safety or efficiency. Second, particularly in the area of OHS, there has been acceptance that where governments attempt to specify (through prescriptive legislation) appropriate measures to minimise risk, the government effectively accepts the role of risk minimisation for itself. Governments generally, including in Australia, see responsibility for risk minimisation as residing with businesses.</p> <p>DMP has developed the Regulations to be objective based rather than prescriptive. This allows for continual improvement in resource management performance and assessments to be undertaken on a case by case basis.</p> <p>Responses to comments on environment protection will be covered in the responses for comments 379 and 380. A response for the comments on fracking has previously been provided for comments 337.</p>
368	<p>The RMA regulations could be viewed to be more process oriented than being focussed on achieving appropriate environmental, operational and management outcomes. To achieve better regulatory efficiency it is [State Government agency's] view for the regulations to be more outcomes focused with the guidelines providing the necessary processes. A rearrangement of aspects of the regulations and the guidelines would improve certainty to both the proponents and Government. [State Government agency] will provide further detail of possible rearrangement.</p>	<p>Refer to response for comment 367.</p>
Re-injection into underground formations		
369	<p>9) Missing from the regulations are assessments into the impacts of reinjection into underground formations.</p>	<p>Assessments into any impacts of re-injection on the petroleum or geothermal resource are required to be included in the contents of a WMP. Item 4 of Schedule 1 requires the title holder to provide</p> <p>“an explanation of —</p> <p>(a) the philosophy of, and criteria for, the design, construction, operational activity and management of the well; and</p> <p>(b) the possible production or injection activities of the well, showing that each well activity will be carried out in accordance with sound engineering principles, codes, standards and specifications and, if the activity relates to the exploration for or recovery of petroleum, good oil-field practice.</p> <p>Impacts to the environment would be addressed in the EP.</p>

	Consultation with industry	
370	<p>It is recognised that changing the regulation from to a risked or objective based approach is a worthy objective for the reasons stated in the guidelines.</p> <p>It will critical to have ongoing consultation between title holders and the department to ensure that WMPs and FDPs are fit for purpose. This will be particularly important in the early stages of their development.</p> <p>We have found from the new Environmental Regulations, where communications have been restricted because the Environmental Department did not want to be seen to be “consulting to industry”, has resulted in several versions of Environmental Plans being submitted. These eventually converge to something that is approved by the regulator, however, this learning process by both the DMP and the title holder has in my view been too protracted and inefficient. Industry is not asking the regulator to do our work, but is requesting assistance in getting rapidly to the right format that the regulator requires. This is better communicated through discussion, rather than continuous circulation of written drafts.</p> <p>I am encouraged to see that consultation is the approached suggested in section 3.3.1 of the guidelines for the RMA.</p>	<p>The move from prescriptive regulation to objective-based regulation places the emphasis on petroleum and geothermal titleholders to identify risks and effects and establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use.</p> <p>It is acknowledged that on-going consultation between titleholder and DMP is critical in determining the relevant standards and best practice in the preparation of the WMP's and FMP's.</p>
	Clarity	
371	<p>[Petroleum/mining industry representative body] supports the need for clarity in the requirements for titleholders to demonstrate the existence of management systems and processes to mitigate risks to as low as reasonably practicable.</p>	<p>The need for clear guidelines and supplementary information to provide guidance to assist the petroleum and geothermal industries title holders with compliance with the requirements of the PGER(RMA) Regs is noted and agreed.</p> <p>Recognising the principles of good regulation, DMP commits to ensuring that Guidelines and supplementary information are:</p> <ul style="list-style-type: none"> • effective and efficient in practice, • being implemented consistently and • reviewed with stakeholder involvement <p>Revisions of these Guidelines will be made available to the public on the DMP website www.dmp.wa.gov.au</p>
372	<p>In order to evaluate how effectively the PAGER RMAA Guideline outlines the requirements and processes of the PAGER RMAA Regulations, both documents were systematically reviewed, section by section. Generally, the PAGER RMAA Guideline appears to be useful to individuals who have an existing understanding of the administrative processes related to surveying, drilling and well management practices. For a first-time reader the Guideline was somewhat lacking in clarity and equivalent sequence to the PAGER Regulations. Fortunately, additional useful and succinct explanation was provided by the Explanatory Notes for the Consultation Draft of the PAGER RMAA Regulations, 2014. The writing style of the Explanatory Notes is considerably clearer than the style of the draft PAGER Guidelines. Inclusion of all of this material into the Guideline would improve the usefulness of the Guideline by improving the overall readability of the Guideline and provide easily cross-referenced explanation to assist operators to comply with the requirements of the PAGER RMAA Regulations 2014.</p>	<p>The Guidelines prepared for the consultation draft of the Regulations will be updated to pick up the amendments to the Regulations since the consultation draft.</p> <p>While the intended reader for these Guidelines is the petroleum and geothermal industry, it is acknowledged that the document will be read by other stakeholders such as other Government agencies, environmental groups, landowners, and the general public.</p> <p>Comments received regarding clarity and writing style will be considered for future revisions of the Guidelines.</p>

	Clarity	
	<p>Comment on style. Use of Abbreviations in table of contents – It is suggested that conformity with basic style guidelines on use of capitalised abbreviations is essential in Regulator documents. Please refer to contents table. Wmp and wmp are both used to refer to WMP. Easily formatted and probably an editing oversight.</p> <p>Comment on style. Figure and diagram labels – Check DMP Style guide. If interchangeable use of diagram and figure is appropriate, ignore this comment. Other style guides use figure for all non-tables. N.b. Figure 1 looks like Table 2 in style. As a general rule diagrams are called figures in scientific documents, or have similar formatting to figures, rather than tables. This is subject to the DMP Style guide.</p>	
	Standards and outcomes	
373	<p><i>Well construction and integrity.</i> In relation to well construction and integrity, there are no specific requirements or outcomes in the RMA regulations for the manner in which wells are constructed. This is a critical issue for the protection of water resources, ensuring aquifer integrity is maintained and water quality is not compromised. Consistent with the intent of the framework document and the risk management approach promulgated in the draft regulations, the [State Government agency] is keen to see specific minimum construction standards or in lieu of any specified standards, the need for particular well integrity outcomes in the RMA regulations that strengthen protection of groundwater resources. The framework document states that “<i>shale and tight gas operators are also required by DMP to meet international standards for well construction so activity does not contaminate any water resources.</i>”</p> <p>The above sentiment was also expressed in the Parliamentary Inquiry whereby the DMP indicated that the new draft RMA regulations would “include the requirement for international standards, well design, several layers of cement and steel casing when wells pass through aquifers, and the whole of life approach ensures that the actual wells are built to manage high pressure processes such as hydraulic fracturing.”</p> <p>Specific requirements were detailed in the inquiry. Furthermore, DMP’s <i>Natural Gas from Shale and Tight Rocks Fact Sheet: Well design and integrity</i>, states that the design and integrity of the well below the surface is critical to the protection of ground and surface water. This fact sheet also includes the recommended casing design and states that the purpose of the casing is to protect groundwater and to keep water out of a well for long term well integrity. The RMA regulations are non-prescriptive in relation to well construction standards or for the expected minimum outcomes. The basis for non-prescriptive or objective based regulation is understandable; however, the [State Government agency] suggests that the regulations include an outline of the minimum baseline outcomes for groundwater resources and connected ecosystems so they are protected in line with the stated intent. To that end, the [State Government agency] will work with the DMP to further develop the regulations in relation to well construction and integrity to ensure that water resources are adequately protected in the short and for the longer term. These issues can be covered in the well management plan, and supported by guidelines to adequately address well construction</p>	<p>A fundamental feature of the objective-based regulation regime in the suite of petroleum and geothermal safety, environment and safety regulations is the move away from prescribing specific standards, criteria or procedures that have to be met.</p> <p>Instead, the emphasis is placed on petroleum and geothermal titleholders to identify risks and effects, establish specific performance objectives, standards and measurement criteria to assess performance against those standards appropriate for the nature and scale of the activity or proposed use.</p> <p>The main driver for this is that the petroleum and geothermal industries are subject to rapid technological change and prescriptive regulation is likely to become quickly out-dated, potentially becoming counterproductive in achieving effective and efficient performance.</p>

	Standards and outcomes	
	<p>and integrity to meet the regulatory outcomes. Specific regulatory outcomes may be needed in the RMA regulations on the decommissioning of wells and fields. Such outcomes should apply to all wells, including exploration, evaluation/proof of concept and production wells, to ensure the ongoing protection of water resources and the water-dependent environment. Similarly, specific outcomes and requirements may be included in the RMA regulations in relation to disposal wells used for the reinjection of wastewater. This is necessary as it is anticipated that disposal of wastewater into wells will be one of the options considered in the future when full development of the industry occurs. Consideration should also be given to addressing long term water resource protection issues in the RMA regulations, such as longevity of wells, responsibility for well management post operations, and accountability for any contamination of aquifers, water supplies or the water-dependent environment. The regulations would benefit from a clearer requirement to address remediation of water resources that are unacceptably impacted by petroleum or geothermal activities. The regulations or guidelines could also be clearer on 'making good' provisions, where applicable.</p>	
	Petroleum (Submerged Lands)(Resource Management and Administration) Regulations	
374	<p>Recommendation 9: DMP to ensure that any regulations that are developed for the <i>Petroleum (Submerged Lands) Act 1982</i> areas are provided an opportunity for public consultation.</p>	<p>The proposed PGER(RMA) Regs are the first of a two resource management and administration regulations. The second part of this set of regulations, the PSL(RMA) Regs will cover submerged lands adjacent to the coast of WA and will be drafted after the public and stakeholder consultation process for the onshore regulations has been completed. A draft of the PSL(RMA) Regs was referred to relevant petroleum titleholders for information.</p>

	Objective-based regulation	
375	<p>In Western Australia, the Schedule of Onshore Petroleum Exploration and Production Requirements 1991 (the Onshore Schedule) has governed the design and construction of petroleum wells to ensure that well integrity remains a priority. The proposed RMA regulations will replace the Onshore Schedule and in doing so will shift the State's approach to well design and construction from prescriptive to objective requirements.</p> <p>Objective-based regulation has been applied in the petroleum sector for decades. In the wake of the North Sea's Piper Alpha disaster in 1988, the United Kingdom government established the Cullen Inquiry to establish the cause of the incident. The 'Public Inquiry into the Piper Alpha Disaster' was released in November 1990 and included 106 recommendations. The most significant of these recommendations was a major shift in the way that safety risks were assessed and mitigated by operators through the use of a 'safety case'. The 'safety case' approach requires the operator to present the regulator with a structured argument, supported by evidence, which establishes justification for a system being acceptably safe.</p> <p>In response to the Cullen Inquiry, the Australian Government established the Consultative Committee on Safety in the Offshore Petroleum Industry, which recommended in 1991 that the key outcomes from the Cullen Report be implemented in Australia – particularly the adoption of a safety case regime.</p> <p>Following the Piper Alpha disaster, Australia introduced a safety case obligation into the <i>Petroleum (Submerged Lands) Act 1967</i> (PSLA) to strengthen the implementation of the duty of care regime. As noted in the Explanatory Memorandum to the Petroleum (Submerged Lands) Amendment Bill 2003:</p> <p>"The term 'safety case' is used to describe a sophisticated, comprehensive, integrated risk management system. This is characterised by an acceptance that the direct responsibility for the ongoing management of safety on individual facilities is the responsibility of the operators and not the regulator."</p> <p>As a result, the offshore regulatory regime for safety in Australia has for some time reflected an objective/principles-based approach to risk mitigation.</p> <p>In a joint report on shale gas released by the United Kingdom Royal Society and Royal Academy of Engineering, the use of objective-based regulation for risk mitigation was recognised as preferential to prescriptive regulation:</p> <p><i>"A goal based approach to offshore and onshore regulation is to be commended. Operators are forced to identify and assess risks in a way that fosters innovation and continuous improvements in risk management. Some argue that this approach is limited to the extent that 'reasonably practicable' is only defined in the UK by case law. An alternative to a goal based approach would be a more prescriptive one adopted in other countries, such as the USA, setting out specific universal standards to be met. This approach has its limitations. It tends to support routine practices and limit innovation in risk management. A prescriptive approach may also be less proportionate and flexible than a goal-based approach to local, site specific risks, as well as changing circumstances, such as the introduction of new technologies or best practices."</i></p>	<p>Comments noted.</p> <p>The proposed PGER(RMA) Regs, like the complementary PGER(MoS) Regs and the PGER(Env) Regs, allow for an objective-based approach for managing the drilling activities of the Western Australian petroleum industry through WMPs.</p> <p>That is, the move away from prescribing specific standards or procedures to placing the emphasis on the achievement of the objectives of legislation on the petroleum and geothermal titleholders to determine how objectives are to be achieved.</p> <p>There are, however, circumstances where prescriptive requirements are required in some of the contents of a WMP. The WMP regime aims to reduce risks and impacts of petroleum drilling activities, to a level which is 'as low as reasonably practicable' (ALARP). It is important to note that what is considered practical will evolve over time as technology, best practice and expertise improve. Title holders should have a mechanism in place to monitor improvements in technology and practices.</p>

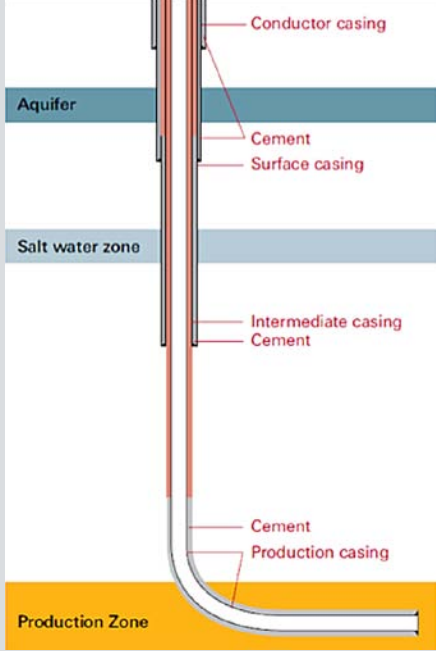
Objective-based regulation		
	In 2011, Dr Tina Hunter (then Bond University) undertook an analysis of the ability of Western Australia's regulatory framework to manage the development of shale and tight gas. Dr Hunter's review produced 15 recommendations, including that DMP should develop regulations across environment and resource management. In 2012, DMP introduced environment regulations which established a legislative basis for approvals and enforcement and, similar to the safety regime, adopted an objective-based approach.	
Geothermal references		
376	It is suggested that consideration be given to refer to geothermal resources throughout the RMA regulations where appropriate for example by adding: "geothermal" (e.g. "a petroleum or geothermal licensee"); "geothermal energy" (e.g. "exploration for or the recovery of petroleum or geothermal energy") "or geothermal resources" when referring only to petroleum resources and the regulation should also apply to geothermal resources.	Noted and agreed that this should be adopted where possible.
Flowcharts		
377	A diagram or flow chart showing plans and reports required and linkages with Acts and regulations would be useful. This may be best included in the guideline or a fact sheet/ framework document for the RMA regulations.	It is agreed that the use of diagrams and flowcharts in Guidelines and publications will be beneficial to DMP is providing stakeholders and the community with a greater understanding of the two sets of Resource Management and Administration Regulations.
Base line Monitoring		
378	<p>The [State Government agency] believes that monitoring of impacts on water resources of petroleum and geothermal activities is necessary and essential for protecting and managing the state's water resources. Monitoring includes the collection of base line data before any activity commences, surveillance monitoring during the operational life of the project and after its decommissioning phase. Surveillance monitoring is addressed in the Petroleum and Geothermal Energy Resources (PGER) Environment Regulations 2012 (Environment Regulations), by the development of Environmental Plans, whereas the collection of base line monitoring data is intended to be included in the RMA regulations.</p> <p>The [State Government agency] suggests there should be clear links between the baseline water monitoring requirements under the draft RMA regulations and the monitoring program during and post operations required under the Environment Regulations. These links are essential and will improve the effectiveness of the monitoring program and associated contingency responses.</p> <p>Although the DMP had stated on previous occasions of its intent for the RMA regulations to address baseline water monitoring, it is only briefly mentioned in Schedule 3, 8(b) – "the applicant's proposals for the management of such aquifers including proposals for baseline monitoring" and in Schedule 4, 8(b) – "<i>the geothermal licensee's proposals for the management of such aquifers including proposals for baseline monitoring</i>".</p>	<p>The proposed PGER(RMA) Regs contain baseline groundwater monitoring provisions as part of the information required for a:</p> <ul style="list-style-type: none"> • field development plan (Schedule 3, item 8), and • geothermal energy recovery development plan (Schedule 4, item 8), <p>Baseline groundwater monitoring also may be required at the exploration phase of a petroleum activity depending on nature and location of proposal. If required, would be addressed in the EP for the activity in accordance with regulation 14 of the PGER(Env) Regs.</p> <p>A DMP guideline titled "<i>Baseline Groundwater Monitoring Guideline</i>" for onshore petroleum industry is to be released and aims to</p> <ul style="list-style-type: none"> • establish leading practice requirements for baseline groundwater monitoring for onshore petroleum activities in WA, • identify situations where baseline groundwater monitoring is required for onshore petroleum activities and • outline general requirements and considerations for undertaking baseline groundwater monitoring.

Base line Monitoring	
<p>It is noted that the Australian guidelines for monitoring groundwater recommend a minimum of two years of baseline water quality sampling to adequately characterise groundwater variability (ANZECC and ARMCANZ, 2000). The draft RMA regulations could be clearer on a requirement for baseline groundwater and surface water monitoring to be undertaken well in advance of the commencement of petroleum or geothermal activities.</p> <p>It is suggested that consideration be given to incorporating into the regulations the outcomes of any base line monitoring programs. Where appropriate, elements currently in the DMP guideline for baseline groundwater monitoring, may be included in the regulations to provide clearer statutory certainty to proponents and the community as to what is expected from baseline monitoring for groundwater. In addition, it is recommended that a guideline for surface water baseline monitoring be developed to supplement the guideline for groundwater monitoring. The [State Government agency] is willing to assist the DMP in the development of such a guideline.</p> <p>An emerging issue is the management of cumulative impacts when large numbers of wells are proposed to be constructed within a reasonably small area or field. While it is still some time in the future this issue needs to be addressed before there is a significant expansion of the industry.</p> <p>It is unclear how the RMA regulations that focus on regulating the construction and operation of individual wells will be able to address the cumulative impacts of a wellfield or of wells constructed and operated by different companies that are closely located. DMP may consider requiring proponents to submit Environmental Plans outlining the full development envisaged and how cumulative impacts are proposed to be addressed. The EPA may consider providing guidance on this matter.</p>	

Comments that do not directly relate to the regulations or guidelines

	Environment and Water Protection	DMP Response
379	<p>Overall, the proposed regulations do not match the WA Government's stated commitment to a regulatory regime that ensures responsible development of the unconventional petroleum industry, while protecting the groundwater resources as nowhere do the objects of the new regulations state that they are intended to manage the very significant environmental risks of gas fracking; and there is an inherent conflict of interest with DMP as the environmental regulator. I therefore strongly recommend that regulations should include legally enforceable environmental controls to cover:</p> <ol style="list-style-type: none"> 1. Groundwater and aquifer contamination; 2. Air pollution; 3. Disturbance to native farmland and native vegetation; 4. Corroding, cracking and leaking wells; 5. Uncontrolled fugitive methane emissions; and 6. Large volumes of liquid waste dumped into the environment. <p>Furthermore, I stand with the Conservation Council of WA, the WA Water Corporation and the WA Community when I emphatically state that we must:</p> <p>Keep WA free from all shale gas mining activities including fracking;</p> <p>Give WA farmers, Native Title Holders and other landholders the right to say no to shale gas mining on their land;</p> <p>Protect our precious water resources from overuse or contamination by shale gas mining;</p> <p>Have independent measurement of leaking methane from shale gas fracking so we can know how polluting this industry really is; and</p> <p>Ensure our natural environment is protected through stronger environmental laws.</p>	<p>The PGERA67 sets out the legislative requirements relating to the exploration for, and the exploitation of, petroleum resources, geothermal energy resources and certain other resources within all onshore areas of the State, including its islands, and, in certain circumstances, areas of submerged lands internal to the State.</p> <p>The PGERA67 also provides for regulations to be made to cover a range of petroleum and geothermal activities including exploration, production, well integrity, resource management, data management, safety management and environmental management.</p> <p>The two Resource Management and Administration) Regulations will be the third and final part of the suite of regulations for the petroleum (both conventional and unconventional) and geothermal industries that commenced in 2010 with the introduction of petroleum and geothermal safety regulations and was followed in 2012 by petroleum and geothermal environment regulations.</p> <p>These regulations will provide a risk-based management scheme for the exploration for, and production of, petroleum and geothermal energy resources. A range of resource management and administration matters, are covered by the regulations, including WMPs for the approval of all drilling activities (including shale and tight gas), well integrity, notification and reporting of discovery of petroleum; FMPs and approvals of petroleum recovery.</p> <p>The regulations ensure that adequate information will be provided about all aspects of exploration, discovery, development and production operations in relation to petroleum and geothermal energy resources. They also outline confidentiality periods applicable to information submitted by title holders. This information ensures that petroleum and geothermal energy resources operations are carried out in a proper manner. In the case of operations relating to the exploration or recovery of petroleum, they also ensure work is conducted in accordance with good oilfield practice and are compatible with the optimum long-term recovery of petroleum and geothermal energy resources. This also supports the safe and efficient management of the resources and assists with optimising the long term benefits to the Western Australian community.</p> <p>In order to undertake onshore petroleum or geothermal related activities in Western Australia prospective proponents must secure relevant titles under the PGERA67 and comply with the strict requirements must be met for each stage of the petroleum and geothermal exploration and production processes before the next stage can begin.</p> <p>While one of the objects of the PGER(RMA) Regs is to reduce the risk of aquifer contamination, onshore environment and water protection regulation is primarily provided by the PGER(Env) Regs. The Environment Division administers these regulations and assesses audits and investigates the environmental impacts from all petroleum and geothermal activity in WA, often in consultation with other government agencies, to any land, air, marine, seabed, sub-seabed, groundwater, sub-surface or inland waters environments.</p> <p>Under the Regulations, an EP is required for exploration and production proposals in State jurisdiction. An oil spill contingency plan is also as part of the assessment process and the level of detail required is dependent upon the type and nature of the activity. A proponent may also require additional environmental approval under other (separate) processes.</p>

	Environment and Water Protection	DMP Response
		<p>The objective of an EP is to ensure that petroleum and geothermal activities are carried out in a manner consistent with the principles of ecologically sustainable development, and to provide a management tool to identify and manage potential risks and impacts associated with the activity. Activities are to be undertaken in accordance with an EP that has appropriate risk based environmental performance objectives and standards, and that provides criteria for determining whether the objectives and standards are met.</p>
380	<p>The vast majority of WA's underground water resources are not designated as 'public drinking water supplies' and have no water quality standards applied at all by any regulatory agency. This is despite the fact that they may be declared groundwater areas (i.e. subject to licensing for water use) and these water resources actually supply drinking, stock watering, agriculture, horticulture and various economic uses as well as water to maintain groundwater dependent ecosystems. All of these purposes are quality dependent and would be significantly and irreversibly impacted by contamination from gas fracking.</p> <p>To the extent that there is widespread use of groundwater for drinking purposes throughout the Mid-west and Kimberley, the distinction between a protected drinking water resource (with water quality standards applied) and declared groundwater areas (where no quality standards are applied) is arbitrary.</p> <p>The same water quality protection measures that are applied to declared drinking water areas (i.e. water quality standards, buffer zones, etc) should be applied to all declared groundwater protection areas.</p> <p>Any proposed regulations dealing with matters that may impact important groundwater sources should fully reflect the social, economic and environmental value and uses of those sources and ensure their protection. The current proposed regulations fail in this regard also.</p>	<p>The quality of the State's water sources are protected through a collaborative approach across Government in regulating the petroleum activities that occur above and below the surface. DMP is the primary regulator, supported by the Department of Environment Regulation (DER), Department of Water (DoW), the Department of Health and the Environment Protection Authority(EPA) where needed.</p> <p>The quality of the State's water resources are protected through addressing the following key issues:</p> <ul style="list-style-type: none"> • Well Integrity – regulated by DMP through the WMP. This Plan details how the well integrity through the design of the well, will address and prevent any potential risks of damage such as leaks. It is the primary tool used by DMP to regulate the activities below the surface, providing protection to groundwater aquifers. • Prevention of spills and leaks from the surface – regulated by DMP through the EP and DER through a Works Approval or Emissions and Discharges Licences (for production facilities capable of 5000 tonnes of oil or gas per year). The EP explains how the environmental impacts and risks associated with drilling and hydraulic fracture stimulation will be addressed and managed. • DMP/EPA Memorandum of Understanding: details when DMP should liaise with the EPA on the approval of a project with respect to potential impacts on water resources. <p>1. Well Integrity</p> <p>Critical to the protection of groundwater is the integrity of the petroleum well below the surface. The ultimate goal of well design is to ensure the petroleum is safely and effectively contained inside the well to enable extraction to the surface. This is achieved by cementing several layers of protective casing between the well bore and the exposed rock face. This process creates an impermeable seal between the various rock formations drilled through (vertically), and into the well bore (horizontally).</p> <p>Pressure testing is performed to ensure the cementing and casing can withstand the pressures involved in subsequent down-hole activities (such as hydraulic fracturing). Perforations in the well casing and cement are created adjacent to the gas-bearing formation to allow gas to flow from the target formation into the well bore, up through the well and thus safely bypass groundwater aquifers. In the hydraulic fracturing process and in producing gas fields, the well bore is also used to contain and convey hydraulic fracturing fluids injected into the well, flow-back fluid and produced water.</p> <p>DMP specifically regulates the construction and integrity of petroleum wells. The figure below illustrates the recommended onshore petroleum casing design. Maintaining well integrity also assists in preventing well 'blowouts'. Blowouts involve a sudden and uncontrolled escape of fluids and can occur above or below the surface.</p>

Environment and Water Protection	DMP Response
	<p>The recommended onshore petroleum casing design includes:</p> <ul style="list-style-type: none"> • Conductor casing: prevents loose surface sediment from collapsing into the well and also protects shallow surface aquifers. This casing is approximately 50 metres deep and is cemented to the surface. • Surface casing: key purpose is to protect groundwater. It is set below the potable aquifers and is where the blowout preventer is installed on the well. It is usually set at 800 metres deep and is cemented to the surface. • Intermediate casing: this is optional and is usually used for deeper wells to reduce the amount of open hole to manage when drilling to the target formation. The cementing procedures are to meet international standards. • Production casing or liner: this is the final casing set for a production well. For casing, it will run up to the surface, whilst a liner will be set inside the previous casing. Cementing procedures are to meet international standards.  <p>Recommended onshore unconventional gas extraction casing design¹</p> <p>The above casing design exceeds the construction requirements of a water well bore due to the different impacts faced by the petroleum well.</p>

¹ Graphic: The Royal Society and Royal Academy of Engineering "Shale gas extraction in the UK: a review of hydraulic fracturing" June 2012

Environment and Water Protection	DMP Response
	<p>2. Prevention of spills and leaks from the surface</p> <p>As noted in section 5.9 'Waste disposal' the disposal of waste must be detailed in an operator's EP which is subject to DMP's approval. In certain circumstances DER will also regulate the construction and operation of a production facility for discharges, in addition to the transportation of waste. These regulatory approvals are essential in ensuring that spills and leaks from the surface are not a source of contamination for groundwater sources.</p> <p>3. DMP/EPA Memorandum of Understanding</p> <p>In accordance with the MOU between DMP and the EPA, DMP liaises on all onshore petroleum proposals which are likely to impact a water resource area, including a water reserve, a declared or proposed water supply catchment area or groundwater protection area. This formalised avenue of liaison is further supported through collaboration between DMP and DoW on projects which have the potential to impact on water resources.</p> <p>Other key elements relating to the protection of water quality include:</p> <ul style="list-style-type: none"> • Public drinking water sources <p>DoW whilst regulating the volumes of water to be taken through allocation, planning and water licensing, also plays an important role in protecting water resources and specifically in protecting public drinking water source areas. By-laws created under the <i>Metropolitan Water Supply, Sewerage and Drainage Act 1909</i> or the <i>Country Areas Water Supply Act 1947</i> enable DOW to control potentially polluting activities, to regulate land use, inspect premises and to take the necessary steps to prevent or clean up contamination within gazetted water reserves.</p> • Protection through the <i>Health Act 1911</i> <p>The <i>Health Act 1911</i> provides another layer of protection for any water supply or catchment area from pollution. This includes any river, stream, watercourse, creek, swamp, water hole, well, tank, lake, or reservoir containing water intended or available for human consumption. The Local Government or the Executive Director Public Health can direct the closure of a water supply, where any medical officer of health or two medical practitioners consider the water to be so polluted as to be unfit for human consumption.</p> <p>Additionally, all mining companies and mining proponents who supply drinking water to employees and/or associated communities and mine sites, need to comply with Australian Drinking Water Guidelines 2004 published by the National Health and Medical Research Council. The results of routine monitoring of these water supplies must be provided to the Department of Health WA. The proponent must establish a drinking water quality monitoring program which normally involves chemical and microbiological analysis of drinking water.</p> <p>As raised earlier in this document, the size and scale of the potential unconventional gas industry is uncertain and will be influenced by a range of factors such as access to equipment and the limited energy infrastructure, to name but a few. If and when commercial production of unconventional gas is achieved, it is critical that the State Government effectively manages the pace of development, to ensure it occurs in a safe and sustainable manner.</p>

	Environment and Water Protection	DMP Response
		<p>The State has in place approvals processes managed by the key departments of DMP, DoW and DER which assess and monitor the impacts on environment arising directly from a project. The EPA also assesses the impacts of multiple operations within an area or region on environmental elements such as native vegetation, groundwater resources and the air shed. A key element in assessing environmental impacts from multiple operations is the collection of baseline data.</p> <p>Baseline monitoring and developing conceptual models</p> <p>As part of the approvals process, DMP already requires that onsite environmental monitoring be conducted by the operating company. This monitoring includes the testing of groundwater in the vicinity before and after an activity by a certified laboratory.</p> <p>DoW in conjunction with DMP is currently undertaking conceptual modelling of unconventional gas development in the Northern Perth Basin. This work is important to understand the potential impacts on ground water resources due to the fracking process on the North Perth Basin system. The project will investigate issues such as the water requirements for injection, the interconnectivity of aquifers and the potential impacts of groundwater extraction on groundwater resources in the Basin. This model will provide the basis upon which numerical models, which could estimate direct impacts, may be developed in the future.</p> <p>Modelling of the Perth Basin is possible due to the information available on the Basin. The level of information varies widely, however, across the regions and even within the regions.</p>
381	<p>Cumulative impacts of projects and plans (ie. field development) are not considered in the regulations. As they are also currently not considered by the EPA either, who will look at these impacts given the projected expansion of this industry across WA?</p> <p>The precautionary principle is lacking from the draft regulations. Inter- and intra-generational equity must also be thoroughly considered and accounted for in the regulations and therefore also in management plans.</p>	<p>Refer to responses for comments 379 and 380.</p>
382	<p>Monitoring of environmental condition. The regulations must require constant real-time monitoring of environmental condition, including all parameters listed above, so that it is possible to ascertain compliance with.</p> <p>Make-good provisions. In addition to fines, the regulations must include 'make good' requirements for the remediation of environmental impacts to original condition in the event of pollution or other environmental harm.</p> <p>The use of large volumes of water together with chemical additives makes it essential that the environmental and social implications of this process are fully and rigorously considered – via an open, public and transparent process.</p> <p>a) Extensive hydrological and geohydrological studies before exploration and production drilling should be required and made public in order to minimise or eliminate potential impacts on other users.</p> <p>b) Appoint an independent specialist(s) to conduct a hydrocensus as well as identify priority water source areas and domestic aquifer supplies indicated on relevant geohydrological maps for consideration in the impact assessment.</p>	<p>Refer to responses for comments 379 and 380.</p>

	Environment and Water Protection	DMP Response
	<p>c) Prior to conducting hydraulic fracturing operations, appoint an independent specialist to conduct baseline water quality assessment of all water resources within 2 kilometre of the vertical projection of the planned wellbore to surface.</p> <p>d) Water samples collected as part of the baseline quality assessment must be analysed by an accredited laboratory and the holder must submit the results to the relevant authority.</p> <p>e) The results must, at a minimum, include a detailed description of the sampling and testing conducted, including duplicate samples, the chain of custody of the samples and quality control of the testing.</p> <p>f) After the baseline water quality assessment is conducted-</p> <ul style="list-style-type: none"> • all water resources subjected to regular sampling, analysis and interpretation of water quality and changes in water levels by an independent specialist; and • submit the results of the analysis and interpretation to the relevant department. <p>g) The relevant department may collect samples of any fluids encountered in the exploration or production area (water or hydrocarbons, at depth or at the surface) for their own analysis and interpretation.</p>	
383	<p>The [State Government agency] and the Department of Mines and Petroleum (DMP) agree on the principle that “protection of the State’s water resources is of the highest priority” as articulated in the document – <i>Natural Gas from Shale and Tight Rocks, An overview of Western Australia’s regulatory framework (Framework document)</i>. This principle was reiterated in the <i>Parliamentary Inquiry into the implications for Western Australia of hydraulic fracturing for unconventional gas</i>.</p> <p>To be entirely clear how the draft Resource Management and Administration Regulations (RMA) are intended to operate so as to meet the principle of protecting water resources, it is [State Government agency’s] preference that the objects of the regulations more explicitly address the protection of water resources and water users from potential adverse impacts of petroleum and geothermal activities. Additionally, it is suggested that the regulations specifically articulate how the resource and environmental outcomes will be achieved, by including explicit regulatory provisions related to the protection of water resources from potential adverse impacts of petroleum and geothermal activities (consistent with the intent of the Framework document).</p>	Refer to responses for comments 379 and 380.
384	<p>Protecting an aquifer in regards to hydraulic fracturing, long-term activity and abandonment. The security of water resources are a key issue for the Western Australian agricultural sector. [State Government agency’s] understands that these RMA regulations are part of a suite of regulations made under the PGER Act. As such, it is noted that the outcome based regulation of the RMA regulations do not mandate standards, instead the plans may follow the Department of Mines and Petroleum (DMP) guidelines for activities such as well integrity and groundwater monitoring.</p>	Refer to responses for comments 379 and 380.

	Environment and Water Protection	DMP Response
	<p>[State Government agency] would like clarity on whether the plans will be able to be enforced for non-compliance given the outcomes based approach. It is essential that the DMP guidelines are sufficient for protecting an aquifer water quality and quantity from the hydraulic fracturing and longer term production activity. Until the draft guidelines for groundwater monitoring are finalised, it is not possible to provide comment on the extent of aquifer protection under the regulations. [State Government agency] understands that the proponent will reflect the guidelines in their plan, at the plan will be the legally binding approval under the PGER. It will be up to the DMP staff to determine whether a petroleum company's plan reflects the guidelines to sufficient extent to protect the aquifer. It may be preferable to have the guidelines as legislative 'codes of practice' given the outcomes based approach. It is important that the overall State regulatory framework and relationships between the various Acts adequately protect water resources.</p> <p>Currently the water legislation and policies made under water legislation does not bind the Minister for the PGER Act and there is no requirement to refer petroleum plans to the Department of Water (DoW) for advice. As a consequence it will be necessary to have clear administrative arrangements to refer petroleum plans to the DoW to determine if there is risk to aquifers. The cumulative effect of many approvals on the water resource needs to be adequately addressed in the overall regulatory framework.</p>	
	Public Health	
385	<p>Overall, the proposed regulations do not match the WA Government's stated commitment to a regulatory regime that ensures responsible development of the unconventional petroleum industry, while protecting the environment, groundwater resources and public health,¹:</p> <ul style="list-style-type: none"> • as nowhere do the objects of the new regulations state that they are intended to manage the very significant environmental risks of gas fracking; and • as there is an inherent conflict of interest with DMP as the environmental regulator. <p>I therefore strongly recommend that regulations should include legally enforceable environmental controls to cover:</p> <ol style="list-style-type: none"> 1. Groundwater and aquifer contamination; 2. Air pollution; 3. Disturbance to native farmland and native vegetation; 4. Corroding, cracking and leaking wells; 5. Uncontrolled fugitive methane emissions; 6. Large volumes of liquid waste dumped into the environment. 	<p>Public health provisions are not contained in the draft PGER(RMA) Regs as these regulations are to provide a risk-based management scheme for the exploration for, and production of, petroleum and geothermal energy resources.</p> <p>A range of resource management and administration matters, are covered by the regulations, including WMPs for the approval of all drilling activities (including shale and tight gas), well integrity, notification and reporting of discovery of petroleum; FMPs and approvals of petroleum recovery.</p>

	Public Health	
386	Missing from the regulations are assessments on impacts on local communities eg. traffic noise, air pollution, social and health effects of industrialising rural areas etc.	Refer to response for comment 385.
387	The primary focus of the [State Government agency], with respect to hydraulic fracturing in shale or tight rock, is the protection of public health from both direct and indirect health effects. Our preferred approach, which emphasises the particular need to guard against contamination of drinking water supplies, and the importance of full chemical disclosure, and baseline and ongoing monitoring, is described more fully in the written (2013) and verbal (2014) submissions to the Legislative Council Standing Committee on Environment and Public Affairs Inquiry into the Implications for WA of Hydraulic Fracturing for Unconventional Gas. The written submission also contains a series of strategic and technical recommendations, including the need for a memorandum of understanding between DMP and [State Government agency].	Refer to response for comment 385.
	Land Access	
388	<p>With respect to the draft Regulations we have some specific comments. The Regulations appear to go a long way towards ensuring that the Department of Mines and Petroleum (DMP) receives enhanced information, reports and updates on proposed exploitation of oil and gas in the State and ongoing production. The reporting requirements are extensive at each stage (exploration; production; abandonment). However, the Regulations do not introduce any reporting or notification obligations with respect to private landowners directly impacted by those exploration and production activities. They appear to provide widely drafted powers to the DMP and the petroleum companies that will make it possible that important information relating to the ongoing or estimated impact on private land and its aquifers, proposed or active fracking procedures, identified geological, contamination and groundwater risks and plans for the remediation of the land remain secret between the DMP and those with an interest in pursuing the production of oil and gas. Informed landholders who are directly impacted by gas and petroleum companies would also be well placed to assist the DMP in monitoring compliance with requirements given the finite resources of the Department. These concerns must be addressed in any new Regulations.</p> <p>In more detail, the filing obligations under the Regulations that would be of most interest to a private landowner would be the Well Management Plans, the Field Development Plans and the Geothermal Energy Recovery Development Plans. A whole section of the Regulations is devoted to the classification of information and rules as to what information can be published, and when. Both Well Management Plans and Field Development Plans fall within the definition of “excluded information” (Reg 84) and pursuant to Reg 85 all excluded information is classified as Permanently Confidential Information (PCI).</p> <p>Where information does not automatically fall within the definition of PCI, it can still be held to be PCI either if the Minister considers that the information contains a trade secret or that it is information where disclosure “would, or could reasonably be expected to, adversely affect</p>	<p>Land access provisions are not contained in the draft PGER(RMA) Regs as the current PGERA67 contains the legislative provisions for land access agreements, compensation and a general framework around how negotiations are done. DMP requires that a titleholder has a land access agreement to the land prior to undertaking any petroleum or geothermal activities.</p> <p>Exploration for or recovery of petroleum or a geothermal energy resource cannot be undertaken except under and in accordance with a PGER title. As a PGER title requires observance of all the provisions of the PGERA67, conducting activities on private land without having reached agreement with the land owner or occupier, could render the PGER title holder exposed to the illegal ‘mining’ provisions (Section 29 and Section 49).</p> <p>The penalty for conducting operations without a title or not in accordance with a title is a \$50,000 fine or five years gaol or both. Similarly, observing the requirements of the PGERA67 is a condition of all titles and any breach of conditions is grounds for cancellation.</p> <p>It is evident that conducting operations on private land without having reached agreement with the land owner/ occupier, is as a serious breach and one which could put the title holder at personal risk as well as jeopardise the title. Accordingly, before conducting any operations on private land, compensation would need to have been paid or an agreement entered into as to the amount, timing and method of payment (if any). Such agreements would of course be best formalised and recorded. There have been circumstances where such agreements have been lost over a period of time, especially where title ownership has been transferred.</p> <p>Any agreement entered into for conducting PGER title operations on private land does not need to be provided to DMP (unless of course in defence of a claim of illegal operations) and it is not the sort of agreement which is contemplated by Section 75 of the PGERA67 as</p>

	Land Access	
	<p>the person's business, commercial or financial affairs" (Reg 85). The ambit of that definition has been drafted too widely. For example it would highly likely be deemed to include an Environmental Management Plan filed by a petroleum producer that related to private land.</p> <p>Also, an entity submitting any information is also able to unilaterally notify the Department that they consider that information to either include a trade secret or be of a nature that its disclosure would or could adversely affect their business, commercial or financial affairs. That unilateral classification will then stand unless a notice challenging that classification is issued to the submitting entity by the Department within an identified period of time. There is no evident standard to which the DMP will issue these notices when considering all applications and also considering landholder interests.</p>	<p>requiring approval and registration. In this regard it is very much up to the PGER title holder to protect its interest by ensuring that agreement for compensation has been settled and that it can evidence such settlement. While it may be possible to have the agreement endorsed against the land title in some manner, this is entirely a matter for the parties to decide.</p> <p>DMP is working with the Pastoralists and Graziers Association and the WA Farmers Federation as well as the Australian Petroleum Production and Exploration Association—to come up with templates and guidelines around these sorts of access agreements because we see an impost on the landowner regarding these. The more assistance that can be given by those peak bodies the better. We also see that there will probably be three different templates: one for pastoralists, one for freehold and one for native title. That process is currently underway.</p>
389	I emphatically state that we must give WA farmers, Native Title Holders and other landholders the right to say no to shale gas mining on their land;	Refer to response for comment 388.
390	Petroleum companies accessing and managing land. Under the PGER 1967 a petroleum company cannot access private land until compensation is paid or access agreed, and a private land holder does not have right of refusal for access to their land. [State Government agency] notes that it is important that the petroleum company is aware of and undertakes the land access requirements in all its activities set out in the regulations. It is important that land access standards are fair and equitable. Currently the land access guidelines have not been finalised and [State Government agency] looks forward to reviewing the draft guidelines. It is important that landholders are aware of their rights and support for these parties is available when required. [State Government agency] also notes that the petroleum companies need to be aware of their obligations under the <i>Biosecurity and Agricultural Management Act 2007</i> . This should be reflected in their plans and needs to be specified in the approval framework and guidelines.	Refer to response for comment 388.
391	There are extensive provisions for the Minister for Mines and Petroleum to seek input from other Ministers under Section 15A of the PGER Act, specifically related to reserved, declared or otherwise dedicated land under the <i>Land Administration Act 1997</i> or any other written law. There are several relevant pieces of legislation including, but not limited to, the <i>Water Services Act 2013</i> , <i>Country Areas Water Supply Act 1947</i> , <i>Metropolitan Water Supply Sewerage and Drainage Act 1909</i> , <i>Waterways Conservation Act 1976</i> , <i>Water Agencies (Powers) Act 1984</i> , <i>Rights in Water and Irrigation Act 1914</i> . Given this statutory requirement, it is the [State Government agency's] view that clarity between the Environment Regulations and the RMA regulations on s15A of the PGER Act would assist proponents and the DMP in the application of the statutory framework. This could be included in the guidelines.	Refer to response for comment 388.

Liability		
392	<p>We have previously expressed concern about the use of prescriptive regulations which potentially transfer liability to the State in the event of a pollution incident. Presumption of liability for environmental impacts. The regulations must include an assumption of liability (until proven otherwise) for any groundwater contamination or air pollution detected within 2km of a fracking well.</p> <p>Well abandonment The very short period of operator monitoring and liability post-abandonment in the current regulations is not acceptable and confers an unacceptable risk the State.</p> <p>Well integrity must remain the responsibility of the proponent in perpetuity (including responsibility for carbon pollution arising from gas leakage); and an environmental bonding system must be established to provide for the remediation of abandoned wells which cause pollution or other impacts to the surrounding environment. A monitoring regime must be established to monitor abandoned wells in perpetuity.</p> <p>Environmental Bonds. Environmental bonds must be applied to gas fracking at a rate of 100% of remediation costs, with a significant proportion of these bonds to be permanently retained by the State for post-abandonment liability.</p>	<p>When a well is to be decommissioned, DMP requires the titleholder to :</p> <ul style="list-style-type: none"> • submit a revision of the WMP detailing the decommissioning procedure for each well, • justify that the well is no longer economical to produce; and • provide a descriptive procedure on decommissioning including removal of the wellhead(s) and surface facilities and protection and security of the well. <p>In addition, a revised EP should be prepared addressing environmental impacts from the decommissioning process environmental remediation of the site.</p> <p>As with all oilfield operations, approval is given if it is demonstrated that the program is in accordance with industry best practice, standards and codes.</p>
393	<p>Missing from the regulations are post well abandonment procedures – who is responsible for wells after they have been abandoned and how will they and their actions be regulated? Will an independent body be overseeing and monitoring the sites?</p>	<p>Refer to response for comment 392.</p>

Independent review		
394	<p>I emphatically state that we must have independent measurement of leaking methane from shale gas fracking so we can know how polluting this industry really is.</p>	<p>DMP monitors all subsurface operations through several mechanisms:</p> <ul style="list-style-type: none"> • The WMP must firstly cite recognised, international standards applicable to particular operations, material and equipment used on well and demonstrate how the titleholder will ensure adherence to the plan. <p>DMP will also</p> <ul style="list-style-type: none"> • attend pre-spud meetings, HAZID and HAZOP meetings, • conduct site inspections and audits to witness and report on operations. • review detailed daily activity reports submitted <p>The daily activities reports will detail a description and details of</p> <ul style="list-style-type: none"> • the activity and the work carried out; • any indication of hydrocarbons or geothermal energy resources • the lithology of underground formations penetrated. • treatment material losses. • a leak-off test or formation integrity test summary. • the estimated daily and cumulative well costs. • the total volume, and properties, of treatment material used. • the total volume, and properties of produced formation material.

Independent review	
	<p>Activities will include</p> <ul style="list-style-type: none"> • all drilling including hydraulic fracturing; • well testing; • well intervention; • wireline operation; • workover operation; • well completion or re-completion; • well maintenance of a well; • production testing (including initial and extended production tests); • production; • re-entering a well; • well shut-in and opening; • enhanced recovery; • injection; • suspension of a well; • abandonment of a well. <p>From an environmental perspective, Regulation 15(6) of the PGER(Env) Regs requires that the EP contains measures to ensure that the environmental performance objectives and environmental performance standards are met.</p> <p>The EP should identify on-site internal or third-party environmental audits planned commensurate with the scale of the activity to ascertain compliance with the EP. Pre-start and close-out internal environmental audits should also be planned when appropriate.</p> <p>Environmental audits should be used to:</p> <ul style="list-style-type: none"> • ensure all significant environmental aspects of an activity are covered in the EP; • ensure that management strategies to achieve environmental performance objectives are being implemented, reviewed and where necessary amended; • identify non compliances and opportunities for continuous improvement; and • ensure that all environmental completion criteria have been met before completing, suspending or decommissioning an operation. <p><i>Management of Non-conformance</i></p> <p>An EP should outline the arrangements for the handling and investigation of non-conformance with the performance objectives, standards and measurement criteria, and the Implementation Strategy. This should also include arrangements for following up of regulatory non-conformances.</p> <p>Any corrective or preventative actions taken should be commensurate with the magnitude of the non-conformances identified. Arrangements for the tracking and close out of action items should be outlined (for example, the use of a corrective action register and tracking system).</p> <p>It should be noted that non-conformance against regulatory requirements may result in penalties being imposed.</p>

	Appeal Provisions	
395	Effect of the approvals under the RMA regulations. [State government agency] notes that there is no appeal from the decision of the Minister for PGER and consequently the adequacy of the DMP briefing of the Minister will be paramount on the protection of the natural resources and other users. [State government agency] would like clarity how affected parties may seek variation to a Minister's decision.	<p>The PGER(RMA) Regs has the following regulations which provide for the</p> <ul style="list-style-type: none"> • regulation 25 where a titleholder may make an objection if the Minister has advised the titleholder to revise an approved WMP; • regulation 55 where a petroleum licensee may make an objection if the Minister has advised the petroleum licensee to revise an approved FMP, and • regulation 86 where may make an objection to a determination of the Minister on the classification of information. <p>Outside these provisions, DMP will consider any questions regarding a decision made by the Minister under the PGER(RMA) Regs.</p>
	Act deficiency	
396	We are particularly concerned that the Petroleum Act lacks the necessary head powers for enforcement of environmental outcomes, and we speculate that is why these regulations have been drafted to avoid any mention of environmental outcomes. This is not acceptable and the Act must be amended if this is the case.	<p>The PGERA67 sets out the legislative requirements relating to the exploration for, and the exploitation of, petroleum resources, geothermal energy resources and certain other resources within all onshore areas of the State, including its islands, and, in certain circumstances, areas of submerged lands internal to the State. The PGERA67 also provides for regulations to be made to cover a range of petroleum and geothermal activities including exploration, production, well integrity, resource management, data management, safety management and environmental management.</p> <p>When finalised, the two Resource Management and Administration) Regulations will be the third and final part of the suite of regulations that commenced in 2010 with the introduction of petroleum and geothermal safety regulations and was followed in 2012 by petroleum and geothermal environment regulations.</p> <p>These regulations will provide a risk-based management scheme for the exploration for, and production of, petroleum and geothermal energy resources. A range of resource management and administration matters, are covered by the regulations, including WMPs for the approval of all drilling activities (including shale and tight gas), notification and reporting of discovery of petroleum; FMPs and approvals of petroleum recovery.</p> <p>The regulations ensure that adequate information will be provided about all aspects of exploration, discovery, development and production operations in relation to petroleum and geothermal energy resources. They also outline confidentiality periods applicable to information submitted by title holders. This information ensures that petroleum and geothermal energy resources operations are carried out in a proper manner. In the case of operations relating to the exploration or recovery of petroleum, they also ensure work is conducted in accordance with good oilfield practice and are compatible with the optimum long-term recovery of petroleum and geothermal energy resources. This also supports the safe and efficient management of the resources and assists with optimising the long term benefits to the Western Australian community.</p> <p>In order to undertake onshore petroleum or geothermal related activities in Western Australia prospective proponents must secure relevant titles under the PGERA67 and comply with the strict requirements must be met for each stage of the petroleum and geothermal exploration and production processes before the next stage can begin.</p>

Act deficiency		
		<p>From an environmental perspective, the Environment Division administers the PGER(Env) Regs and assesses, audits and investigates the environmental impacts from all petroleum and geothermal activity in WA often in consultation with other government agencies.</p> <p>Under the Regulations, an EP is required for exploration and production proposals in State jurisdiction. An oil spill contingency plan is also as part of the assessment process and the level of detail required is dependent upon the type and nature of the activity. A proponent may also require additional environmental approval under other (separate) processes.</p> <p>The objective of an EP is to ensure that petroleum and geothermal activities are carried out in a manner consistent with the principles of ecologically sustainable development, and to provide a management tool to identify and manage potential risks and impacts associated with the activity. Activities are to be undertaken in accordance with an EP that has appropriate risk based environmental performance objectives and standards, and that provides criteria for determining whether the objectives and standards are met.</p>
Ineffective Regulation		
397	<p>Overall we believe these regulations will be totally ineffective in controlling an inherently risky industry in the public interest. They seem intended to provide a guaranteed rubber-stamp approval should any company make an application and comply with some simple administrative requirements.</p>	<p>Petroleum and geothermal titleholders are currently required to comply with resource management and administration requirements as part of conditions imposed on the grant of title and also in the Schedule of Exploration and Production Requirements issued by way of a Ministerial direction on the granting of a petroleum or geothermal title.</p> <p>It is preferable, however, that these requirements be prescribed in regulations as this will:</p> <ol style="list-style-type: none"> a) convey the importance of drilling, data management and resource management in petroleum and geothermal operations, b) provide confidence and certainty to titleholders of the requirements and conditions to be met, c) demonstrate transparency, d) provide consistency of application across the petroleum and geothermal industries, and e) enable enforceability of penalty provisions. <p>Under the PGERA67 and subsidiary resource management, safety and environment regulations, DMP will manage petroleum and geothermal activities under four main headings:</p> <p>PLANNING</p> <p>Before commencing drilling, an operator must have an approved:</p> <ul style="list-style-type: none"> • EP, • Safety Management System (SMS), • WMP, and • Land access agreement

Ineffective Regulation	
	<p>DMP will rigorously evaluate the application to ensure that aquifers and resources are protected well integrity is maintained including:</p> <ul style="list-style-type: none"> • checking casing and cementing programs at appropriate depths during drilling; • monitoring well completions and production; and • well abandonment or suspension. <p>DMP will also:</p> <ul style="list-style-type: none"> • Attend Hazard and Operability (HAZOP) and Hazard Identification Studies (HAZID) meetings, • Attend pre-spud contractor meetings, and • Monitor the full lifecycle of the well <p>DRILLING</p> <p>DMP will require operators to:</p> <ul style="list-style-type: none"> • Conduct baseline monitoring of aquifers in new areas, • Monitor and verify cementing operations (logging), • Conduct real time monitoring of pressures and drilling fluids during operations, reported to DMP daily, • Review micro-seismic monitoring of stimulated well, where applicable, and • Submit daily drilling reports and well completion reports once the well has been drilled. <p>DMP achieves this by:</p> <ul style="list-style-type: none"> • Reviewing operators' internal audits of operations and systems to ensure they are properly applied, • Putting conditions on application and authorising permission to drill, • Monitoring daily drilling and geological reports and auditing of field activities, • Consultation and approval at key points of the well, • Reviewing and approving completion, production, suspension or plug and abandonment programs upon conclusion of drilling operations. <p>PRODUCTION</p> <p>Proponent:</p> <ul style="list-style-type: none"> • Submits a Discovery Report, • Submits a Declaration of Location (DoL) and FMP, and • Applies for a Production Licence.

	Ineffective Regulation	
		<p>DMP:</p> <ul style="list-style-type: none"> • Receives, assesses and approves application to drill and complete, • Receives, assesses, comments on and accepts DoL and FDP, • Receives and monitors daily drilling reports (DDR) following commencement of drilling, • Approves commencement of and monitors production or extended production test (EPT), establishes production rate, • During production – <ul style="list-style-type: none"> ◦ receives and monitors annual title assessment reports and monthly production reports, ◦ assesses and monitors well workovers, interventions, WMPs, Safety Management System (SMS) (when required) and EPs, and ◦ audits production metering. <p>DECOMMISSIONING</p> <p>When a well is to be decommissioned, DMP requires the titleholder to:</p> <ul style="list-style-type: none"> • submit a revision of the WMP detailing the decommissioning procedure for each well, • justify that the well is no longer economical to produce; and • provide a descriptive procedure on decommissioning including removal of the wellhead(s) and surface facilities and protection and security of the well.
	Air Quality Protection	
398	<p>Fugitive gas leakage. Methane gas is a powerful driver of climate change and methane leakage is a major issue in gas fracking operations elsewhere in the world. The regulations must:</p> <ul style="list-style-type: none"> • Require baseline monitoring of ambient methane emissions • Require ongoing real-time monitoring of ambient methane in proximity to all gas wells at all times. • Prohibit any fugitive gas leakage from any gas wells or infrastructure, without flaring. 	<p>Air quality management for petroleum or geothermal activities is managed under an EP in accordance with the PGER(Env) Regs.</p> <p>In the EP, an operator of a petroleum activity or geothermal activity must detail the anticipated air emissions and how the risk of these emissions will be managed to as low as reasonably practicable. In addition, regulation 34 requires the monitoring and reporting every three months of all emissions and discharges to air in the course of the activity</p> <p>There are several sources of air emissions which change as the petroleum and geothermal activities progress through their lifecycle from exploration to decommissioning.</p> <p>Potential sources at the exploration stage, which are temporary in nature, include: diesel/ natural gas emissions from the drilling rigs; diesel emissions from the fracturing fluid pumps which provide the pressure needed to pump the fluid into the well and propagate fractures; venting or flaring during exploration/proof of concept stage. This involves the burning of 'excess gases'. It only occurs at the exploration/proof of concept stage during the testing and completion of the well when there are no production facilities to capture the gas.</p>

Air Quality Protection		
		<p>During production emissions may potentially occur from the pumps used to bring the gas to the surface and from leaks from pipe connections known as 'fugitive emissions'. Good oil and gas field practice, which DMP requires of operators, requires this to be minimised to as low as reasonably practical.</p> <p>The venting of hydrocarbons (including Volatile Organic Compounds) which may occur in the exploration stage as mentioned above, poses a fire and explosion risk to a gas plant and is not permitted under any circumstance at the production stage. Worker and community health and safety requirements preclude any significant risks of this nature.</p>
DMP Resources		
399	[Petroleum/mining industry representative body] supports the need for appropriate resourcing for the Department of Mines and Petroleum to ensure it can perform its increased regulatory role.	<p>Petroleum and geothermal titleholders are currently required to comply with resource management and administration requirements as part of conditions imposed on the grant of title and also in the Schedule of Exploration and Production Requirements issued by way of a Ministerial direction on the granting of a petroleum or geothermal title.</p> <p>The change to regulations is not expected to as increase the regulatory requirements and therefore impact on DMP's staff resources.</p>
Petroleum Pool References		
400	<p>Reference to "petroleum pool" throughout the regulations may be amended as this term relates to conventional petroleum resources only, being a "discrete accumulation of petroleum". It does not cover unconventional resources which are generally not found in a discrete pool. In some cases, deleting the word "pool" will ensure that the regulations apply to all petroleum resources (e.g. replacing "petroleum pool or geothermal resources" with "petroleum or geothermal resources"). In other cases, the term "pool" may be replaced with "formation" or "resource". All terms should preferably be defined.</p> <p>Where "petroleum pool" refers to the quantity of resources, defining the appropriate area (e.g. within lease area) would be beneficial.</p>	<p>It is acknowledged that the term "petroleum pool" only relates to conventional petroleum resources and has no relevance for unconventional resources which are not found in discrete accumulations.</p> <p>The PGERA67 definition of "petroleum pool" has not yet been amended to incorporate unconventional petroleum resource terms and provisions.</p> <p>The PGER(RMA) Regs cannot include unconventional petroleum resource terms and provisions as s43(1) of the <i>Interpretation Act 1984</i> states that "Subsidiary legislation shall not be inconsistent with the provisions of the written law under which it is made, or of any Act, and subsidiary legislation shall be void to the extent of any such inconsistency."</p> <p>Until amendments are made to the PGERA67, and subsequently these Regulations, readers are requested to take a broader interpretation of the meaning of petroleum pool to also include "unconventional petroleum resource areas".</p> <p>"Geothermal resources area" is used in the Regulations in Parts 4 and 7 and their related Schedules, as this is definition in the PGERA67 and "means a discrete area that contains geothermal energy resources". This definition was inserted in 2007 as part of wholesale amendments to the (then) <i>Petroleum Act 1967</i> to provide for exploration and recovery of geothermal energy.</p>

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