

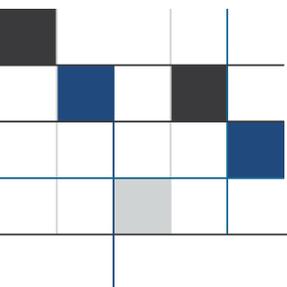
# Policy

## Use of operating strategies in the water licensing process

Formerly operational policy 5.08

October 2020

(Plain English version, December 2020)



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## Foreword

The Department of Water and Environmental Regulation (the department) has made a policy framework for all our regulatory documents. The framework has a clear and structured document hierarchy. It guides the department and our stakeholders on how to use the documents.

We have created a new format for this document to show where it sits within the framework.

We have not changed the content of this document and it remains the department's position.

For more information on the policy framework, see our website at [www.dwer.wa.gov.au](http://www.dwer.wa.gov.au)

This document was previously published in June 2011.



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## Summary

The department manages the state's water resources and grants access to those water resources through a licensing process under the *Rights in Water and Irrigation Act 1914*.

All water licences have terms and conditions that detail the licensee's responsibilities and specify the volume of water they may take in any given year (the water entitlement or allocation). These conditions help mitigate the impacts of taking the water and reflect how closely a particular water resource must be managed. Given the use of our water resources is reaching sustainable limits, the department must address broader issues related to the take and use of water.

In April 2010, we reviewed the 2004 document *Statewide policy no. 10: Use of operating strategies in the water licensing process*. We published the revised document as *Operational policy 5.08: Use of operating strategies in the water licensing process*. This current version updates the April 2010 report and includes appendices with guideline formats for producing either a basic or detailed operating strategy. Although the format of operating strategies will be similar, users may adapt the content to their individual circumstances.

This policy identifies which water licence applicants may have to develop operating strategies. We describe how these strategies may form part of the conditions in a water licence, how licensees must abide by the commitments within them and how to amend, renew and transfer them.

This policy outlines the format and content we expect for an operating strategy. Licensees must include their:

- water source(s) to be used
- land use, water abstraction regime, and methods and infrastructure they are using to abstract and distribute the water
- monitoring and reporting requirements
- methods to manage impacts on the aquifer or the surface watercourse, the environment and other water users
- contingency plans, describing how they will alter their operations to cope with unforeseen circumstances or mitigate adverse impacts from the operation
- water efficiency measures.

Licensees bear the cost to develop and implement their operating strategies.



# 1. Policy statements

The department places terms and conditions in licences to take and use water, granted under section 5C of the *Rights in Water and Irrigation Act 1914*. We may require that a water licence applicant or licensee must develop and implement an operating strategy when:

- licence conditions alone cannot satisfactorily address all water resource management issues related to that particular licence
- a significant volume of water is to be taken
- we need to ensure any impacts from the taking of water on the aquifer, environmental values or other water users are quantifiable and remain acceptable
- the water resource in question requires stringent management
- water is abstracted from several sources or from a large number of bores, and requires careful management
- the taking of water by the particular licensee is critical for the wellbeing of the state and the community.

Operating strategies will supplement licence conditions. They will detail how the licensee will manage their operations given the broader management issues associated with taking and using the water.

Where operating strategies are deemed necessary, licences to take water will include a condition requiring licensees to comply with department approved operating strategies.

## 2. Background

### 2.1 Issue

Western Australia's development depends on the sustainable use of water resources, and the protection of water-dependent ecosystems. We manage the state's water resources and grant access to those water resources through a water licensing process.

All water licences have a set of standard terms and conditions that detail the licensee's responsibilities and specify the volume of water they may take in any given year. These conditions reflect how closely a particular water resource must be managed. Some licensees must monitor, manage and regularly report on any impacts the taking of water may have on the water resource, the environment and other water users.

As use of our water resources approaches its sustainable limits, we must manage several broader and critical issues, including the environmental impacts of that use. These broader issues are generally site-specific and we believe significant input from



the licensee is best to develop unique conditions for their water licence (i.e. an operating strategy).

In April 2010, we reviewed the 2004 document *Statewide policy no. 10: Use of operating strategies in the water licensing process*. We published the revised document as *Operational policy 5.08: Use of operating strategies in the water licensing process*. This current version updates the April 2010 report and includes appendices with guideline formats for producing either a basic or detailed operating strategy. The revision also has an addendum form for the licensee to complete if they need to change their the operating strategy during the term of their water licence.

We have used operating strategies in the water licensing process since 2004.

## 2.2 Our intent

This policy makes use of the licensing process to better manage the state's water resources. We intend to:

- support the licensee to produce their operating strategy to satisfactorily address issues related to the taking of water from a particular water resource at a specific location
- heighten the licensee's awareness of their responsibilities and increase their participation in managing the water resource
- use the licensee's knowledge of the local area and their industry to address site-specific and operational issues for the taking and use of water
- support the principle of water conservation such that licensees use the water in an efficient and productive manner
- ensure licensees have considered risk and contingency options should water shortages or unexpected impacts from water abstraction occur.

## 2.3 Legislation

The *Rights in Water and Irrigation Act 1914* establishes the legislative framework for managing and allocating water resources in Western Australia. A person may need a licence under section 5C of the Act to lawfully take water from an artesian well, from a non-artesian well within a proclaimed groundwater area or from surface water within a proclaimed surface water area. A person does not need a water licence for riparian use or where an exemption or relevant by-laws apply.

The department is responsible for discharging the specific water resource management powers and functions set out in the Act. As such, the grant or refusal to grant a water licence is at our discretion.

Clause 15 of Schedule 1 of the Act allows us to include terms, conditions and restrictions in licences. We may also include conditions that refer to attachments or other documents (e.g. an operating strategy) that the licensee must abide by.

We link an operating strategy to a water licence using a condition that refers to commitments in an operating strategy. We consider these commitments are



conditions of the licence and are part of the statutory licensing process. We may amend the commitments during the term of the licence (Appendix C). Licence conditions and commitments have review provisions. However, until any licence amendment is approved, the licensee must adhere to the original conditions, including the operating strategy commitments.

If the licensee breaches these commitments we will consider they have breached the water licence condition.

## 2.4 Policy links

We may ask a licensee for a separate hydrogeological report (including groundwater investigations and monitoring data) as a prerequisite to their operating strategy (see Operational policy 5.12). They may be able to use some sections of the hydrogeological report for their operating strategy (e.g. monitoring).

An operating strategy must always have a water use efficiency plan, as described in *Policy: Water conservation/efficiency plans* (DWER 2019).

# 3. Implementation

## 3.1 Application

This policy applies statewide and to all applicants and licensees (whatever their legal structure) that must develop and implement an operating strategy as a condition of their water licence under the *Rights in Water and Irrigation Act 1914*. This policy supersedes the earlier (April 2010) version of operational policy 5.08.

Water allocation plans may say that operating strategies must provide additional details in specific locations. Similarly, by-laws may supplement or in some cases override these policy requirements for specific areas.

## 3.2 When operating strategies are likely to be required

We may require applicants or licensees to develop an operating strategy in one or more of the following circumstances:

- they meet the requirements of the decision table in Section 3.5 of this policy (Table 1)
- they are a licensed water service provider – they will need an operating strategy for each scheme they operate, especially those supplying potable water
- they are proposing to operate multiple wellfields or take groundwater and surface water conjunctively (they may draft one operating strategy to cover both licences – groundwater and surface water)
- they are proposing to construct and operate a managed aquifer recharge scheme that involves groundwater injection and abstraction



- they are proposing to construct very deep bores (more than 1 km) as part of geothermal heat exchange or power production
- they need to develop contingency plans, particularly where the project is of state significance, depends on a reliable water supply, and there is limited information available on the water resources being accessed
- we have set environmental water provisions and the taking of water must be carefully managed to ensure these are not diminished
- where water allocation plans or by-laws include additional criteria that say operating strategies must be developed.

### 3.3 Notifying applicants they must prepare an operating strategy

We will advise a new water licence applicant if they must develop an operating strategy. In such cases, we will need to approve the operating strategy before we can grant a water licence. We discuss the timeframes for drafting an operating strategy in our *Policy: Timely submission for required further information* (2019).

If an existing licensee must develop an operating strategy, we will tell them about this requirement and ask them to prepare and submit a draft operating strategy. We may place a condition on the existing licence specifying the timeframe for sending us a draft operating strategy as per the *Policy: Timely submission for required further information* (2019). Failure to comply may jeopardise renewal of the licence when it expires.

Applicants and licensees bear the cost to produce or modify their operating strategies.

### 3.4 Identifying the management objectives

When developing their operating strategy, the licence applicant or licensee will first need to clearly identify the management objectives. These relate to the likely impacts of taking and using the water (generally identified in hydrogeological studies) and how to manage these impacts.

For example, the taking of large volumes of water may result in water levels reducing over a large area and affecting other nearby water users. In this case, a management objective may be that water level reductions from the proposed taking of water must not adversely affect the operations of other nearby water users. The strategy must identify the management response if impacts were observed (e.g. shut down bores, make good supply).

It is essential that the licence applicant or licensee identifies the management objectives. This helps to determine their monitoring program, identify their trigger levels for taking action, and their reporting mechanisms.



## 3.5 Types of operating strategy

Appendices A and B show the standard format to produce basic and detailed operating strategies respectively. These formats help licence applicants and licensees identify the issues they need to consider when drafting their operating strategy.

A basic operating strategy is usually appropriate when the development poses a low to medium risk of impacts to the water resource, other water users or the environment. A detailed operating strategy is generally required for those that may cause medium to high impacts on the water resource, other water users or the environment.

The information and decision table below is to help applicants and licensees determine what type of operating strategy to develop. Note that policies in water allocation plans for specific areas may override this decision-making process.

### **Volume of water to be taken**

Abstraction or pumping of groundwater lowers the groundwater level around the bore. Likewise, the taking of significant volumes of surface water may affect the natural flow of that particular watercourse. As the volume of water taken increases, so do the likely impacts. In the decision table (Table 1), we assign higher points to larger volumes of water taken.

### **Level of allocation**

The 'level of water allocation' or 'category of use' is a risk-based tool we use to determine the degree of management response that a specific water resource management unit needs. We divide the water allocation limit for licensed use into four categories – C1 to C4. As the water allocated approaches the allocation limit, we must increase the management effort to ensure the potential risks to the water resource, the environment and existing water users are acceptable, manageable and local in nature.

### **Potential for impacting other water users**

Taking groundwater will draw down the water level, depending on aquifer characteristics and the volume and duration of pumping, and may affect other nearby groundwater users. Similarly, taking surface water is likely to affect downstream users, especially if the proposal is to construct an in-stream dam. The points we assign in the decision table increase as the likelihood of affecting the operations of another user increases.

### **Potential for impacting on ecosystems**

The taking of large volumes of either groundwater or surface water may affect the flora and fauna of nearby ecosystems (e.g. in wetlands, streams or springs). The significance of these water-dependent ecosystems must be considered. In the decision table, we assign points corresponding to the likelihood that the taking of



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water affects the ecosystem by reducing the quality or quantity of water available to it. As the likelihood of that ecosystem being impacted increases, the points increase.

**Existing salinity**

The salinity of a water resource is a broad measure of the beneficial use or value of the resource. The community places a high value on groundwater or surface water resources with a salinity level at fresh, drinking-water quality. Water of higher salinity has limited uses. Very saline water is only useful for some industrial or mining purposes. In the decision table, points increase as water salinity declines (i.e. becomes fresher).



*Table 1 Decision table for types of water resource management operating strategies*

<b>Volume of water to be taken (kL/year)</b>	<b>Level of allocation</b>	<b>Potential for impacting other users</b>	<b>Potential for impacting ecosystems</b>	<b>Existing salinity (milligrams per litre)</b>
0–499,999 (0 points)	0 to <30% C1 (0 points)	Impacts unlikely (0 points)	Impacts unlikely (0 points)	Fresh <1,500 mg/L (4 points)
500,000–2,000,000 (2 points)	30 to <70% C2 (1 point)	Impacts possible (2 points)	Impacts possible (2 points)	Brackish TDS 1,501–5,000 mg/L (2 points)
2,000,001–5,000,000 (5 points)	70 to <100% C3 (2 points)	Impacts likely (5 points)	Impacts likely (5 points)	Saline TDS 5,001–50,000 mg/L (1 point)
5,000,001 and above (8 points)	100% and over C4 (3 points)			Hypersaline >50,001 mg/L (0 points)
<b>Points assigned = a</b>	<b>Points assigned = b</b>	<b>Points assigned = c</b>	<b>Points assigned = d</b>	<b>Points assigned = e</b>

#### Using Table 1

We assign points for each column in the table (i.e. volume, level allocation, potential impacts – users, ecosystem and salinity) and add them to arrive at a score. The results from a hydrogeological study, if available (see operational policy 5.12) will help populate this table. Using Table 1:

Score (= a+b+c+d+e)

0–7 points: licence applicant unlikely to need an operating strategy

8–12 points: licence applicant likely to need a basic operating strategy

> 12 points: licence applicant likely to need a detailed operating strategy

The decision table is only a guide and depending on the issues, we may ask licence applicants to develop a detailed strategy. This may be the case even when the points assigned to the proposal suggest only a basic operating strategy.

We will require water service providers to develop either a basic or detailed operating strategy depending on additional issues such as the reliability of supply and whether any alternative supplies exist. We generally require a detailed operating strategy for the following licences:

- that operate groundwater and surface water schemes conjunctively



- for managed aquifer recharge and geothermal schemes
- that need a detailed contingency plan due to reliability of supply.

### 3.6 Assessing and approving an operating strategy

The applicant or licensee must send their draft operating strategy via email or hard copy to our regional offices. We will then assess it to ensure they have addressed all the relevant water resource management issues.

Appendices A and B outline the issues and give the structure of a basic or detailed operating strategy. However, sometimes we ask an applicant or a licensee to develop an operating strategy different to these guidelines, if other issues arise.

If we decide the applicant or licensee has not supplied enough information in the operating strategy, we will return it to them for modification. See our *Policy: Timely submissions of required further information* for the timeframes to resubmit the strategy.

We cannot specify strict timeframes to assess operating strategies. This is because they are complex and address individual issues. However, we start the assessment process as soon as possible to ensure applicants and licensees are not unduly disadvantaged.

Applicants and licensees should know that because an approved operating strategy forms part of the terms and conditions of a licence to take water, the public may be able to access it, using freedom of information law. Applicants or licensees must try to ensure their strategy does not include commercially sensitive information.

If we approve the draft operating strategy, the applicant must send us two signed hard copies and one digital copy of the approved strategy. The responsible department officers then sign both hard copies of the operating strategy. We send one back to the applicant and keep the other copy. The licensee should store their water licence with the approved operating strategy in a secure location.

When we grant a licence (after we approve the operating strategy) we will place a condition in it that requires the licensee to comply with the approved operating strategy's commitments. As these commitments are part of the licence conditions, the commitments must not contradict or obscure other terms and conditions included in the licence.

An example of a licence condition we may include in water licences subject to an operating strategy is:

The licensee shall comply with the commitments of the operating strategy, as prepared by the licensee and approved by the department on including any modifications to the strategy as approved during the term of the licence.

Please note we may vary the wording of water licence conditions from time to time.



### 3.7 Complying with the operating strategy

A licensee must manage their take and use of water in line with their licence terms and conditions and any documents (such as an operating strategy) we refer to in the conditions. If licensees do not comply with the commitments in an approved operating strategy, will consider this a breach of the licence conditions and they may be prosecuted.

To avoid this situation, if a licensee/agreement holder cannot comply with any of the commitments in the operating strategy, or if limits have been exceeded (i.e. maximum pump rates, environmental conditions), they should report these to us immediately. They should then tell us why they could not meet their commitments.

If the situation is likely to continue, the licensee must change their business operations as defined in the contingency planning section of their operating strategy, or request an amendment. We will then decide whether the amendment they have asked for is acceptable.

The licensee may also contact us and request permission to take immediate and specific actions to respond to an emergency situation, such as a potential dam breach. They should first contact us by telephone, and then follow up in writing (either by email, letter or facsimile) to ensure we have evidence of their emergency response.

In most cases, licensees must regularly send us compliance reports. These detail how they are adhering to licence terms and conditions and the commitments of the operating strategy. We will assess any compliance reports for operating strategies or other licence terms and conditions as soon as possible. These reports are sometimes referred to as annual/triennial monitoring reports (see Operational policy 5.12).

Licensees must submit their compliance reports on time and satisfactorily address the requirements (conditions, commitments) associated with their particular licence. If we find that a compliance report is unsatisfactory, we will contact the licensee and advise them they are no longer compliant with their licence conditions. We will tell them what additional work they must do to satisfy the reporting commitments.

### 3.8 Amending an operating strategy

Operating strategies may need to be amended from time to time – see the amendment form in Appendix C. The reasons to amend an operating strategy include:

- the licence conditions or water entitlement have been amended
- the project, or the water abstraction rate or method has changed significantly from that which was originally planned (e.g. significantly more water of a certain quality is needed in mineral processing, meaning that some bores may have to be relocated to access the better quality water)
- when water entitlements are partially or fully transferred or leased to another licensee



- monitoring shows the operation is having unintended impacts on the aquifer, the environment, or other users or that the impacts of taking the water are significantly different to those originally predicted
- the licensee must update their monitoring program or contingency plan to reflect current management practices or changes to management objectives
- the licensee must do additional monitoring and evaluation to better determine the impacts of taking the water
- new information on the status of the water resource indicates we must change the operating strategy (e.g. the sustainable limit of the aquifer has been re-evaluated)
- a water allocation plan requires existing licensees with operating strategies to amend their strategies
- when we, under exceptional circumstances such as a prolonged drought, issue a direction or request or permit the licensee to take specific actions, overriding the operating strategy.

The *Rights in Water and Irrigation Act 1914* gives us the power to amend licence conditions (including the operating strategy) and provides the licensee with an opportunity to appeal against any amendments.

When we identify that changes to an operating strategy are needed, we will conduct a review and advise the licensee of the outcome. The licensee may seek further clarification from us before amending the operating strategy to include our requested changes.

The licensee can also ask to amend the operating strategy at any time. They will need to tell us, in writing, why they want to amend the strategy and what the proposed amendments are. If we consider the proposed amendments are acceptable, we will change the operating strategy to include them.

Any amendments will need to meet our resource management objectives and the requirements of any relevant policies, plans, or by-laws.

The licensee must bear the cost of all amendments to an operating strategy. We use the same approvals process as described in section 3.6. Until we change the licence to reflect the amended operating strategy, the licensee must adhere to their previous commitments.

### 3.9 Renewing licences with operating strategies

We generally grant water licences for a term that does not exceed 10 years. Before the licence expires, the licensee must apply to renew the licence. They must also demonstrate they have complied with the terms and conditions in their licence, including their operating strategy commitments.

If the licensee has not complied with the terms and conditions in the licence, including their operating strategy commitments, we may take enforcement action depending on the significance of the breaches.



### 3.10 Transferring licences with operating strategies

Before we approve a water transaction (trade, transfer or agreement) for another person to take the water, the licensee must demonstrate compliance with the conditions of their existing licence. This includes the commitments in their operating strategy, if they have one. We may only approve transactions of compliant licences.

Where a licence with an operating strategy is either transferred to a new licensee or an agreement is drafted for another party to take the water, we will give the licensee or agreement holder a copy of the operating strategy associated with the original water licence.

The new licensee or agreement holder must update the administration section of the operating strategy (see Appendix A) to include the new contact details and return a signed copy to us. We will consider the commitments in the operating strategy to be in force, unless we approve any amendments to those commitments.

If a licensed allocation is only partly relinquished either through a trade or agreement, both parties will need to submit either a new (purchaser) or modified (original licensee) operating strategy. In exceptional circumstances we may consider a water licence transaction where the original licensee has not complied with all the commitments of an operating strategy.

Such a situation may arise where the original licensee demonstrates non-compliance because of circumstances beyond their control or where a trade or an agreement (i.e. to move abstraction to a different location) would benefit water resource management (i.e. diminish environmental impacts). In such circumstances the proposed new licensee must produce a new operating strategy and we would need to approve it before we go on to approve the water licence transaction.

## 4. Review

We will review this policy five years from the publication of this document. We may review it sooner if significant changes (such as new water management legislation or new water management initiatives) make our advice out-of-date.



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## Appendices

Appendix A Guideline for producing a basic water resource operating strategy associated with a water licence

Appendix B Guideline for producing a detailed water resource operating strategy associated with a water licence

Appendix C Addendum to a water resource operating strategy associated with a water licence issued by the Department of Water and Environmental Regulation



Government of **Western Australia**  
Department of **Water and Environmental Regulation**

## Appendix A

### Guideline for producing a basic water resource operating strategy associated with a water licence

- The Department of Water and Environmental Regulation may ask you to produce a water resource operating strategy in association with a water licence application: a ‘basic’ strategy for low-risk water-resource developments and a detailed strategy for higher-risk projects.
- You must write your report in association with Policy: Use of operating strategies in the water licensing process (2019), and in the state’s north-west, the Pilbara water in mining guideline (2009).
- You should use simple and clear terms, minimising vague phrases such as ‘avoiding significant impacts’. Instead, you should present material that is measurable; for example, ‘we will review and modify bore pumping rates according to Department of Water and Environmental Regulation recommendations if water levels decline greater than one metre from the lowest historical recorded water level’.
- This document is a guideline and may not contain all the relevant issues for a water licence applicant who must produce an operating strategy.
- You may not need to address all issues in this guideline – you should contact your regional office of the Department of Water and Environmental Regulation to discuss your requirements.
- See our addendum to change an operating strategy during the term of the licence.

**Name of water licence applicant/licensee** .....

**Name of development project or purpose** .....

**Legal description and address of land where (a) water is taken, and (b) water is used (if different)**.....

*“I understand that the commitments given in the attached operating strategy will be a condition of an associated water licence if approved and that a breach of a commitment or any licence condition may be an infringement of the Rights in Water and Irrigation Act 1914”:*

#### **Signatures**

Person legally responsible for water licence

..... **Date**..... printed name:

Approved by Department of Water and Environmental Regulation delegated

authority..... **Date**..... printed name:



# 1. Administrative requirements

This section outlines the administrative arrangements necessary to ensure you adhere to your strategy.

- 1.1 List any other water licences already issued that are relevant to this operating strategy, otherwise write 'none'.
- 1.2 Does the water licence involve staged development? If so, please attach an account of anticipated water demand for each stage.
- 1.3 Has there been any investigation and reporting on the water source and/or environment involving the development? (e.g. a hydrogeological, hydrological or environmental report). If 'yes', attach brief summary.
- 1.4 Is your development within an area covered by a water resource management/allocation plan that the Department of Water and Environmental Regulation has produced? If yes, please review plan and determine if there are any specific water resource management issues you should address in an operating strategy.
- 1.5 Person/position responsible for implementing operating strategy and contact details including phone number and residential/postal address.
- 1.6 What are the reporting dates for the: (1) water use (metering) data<sup>1</sup> and (2) the operating strategy compliance report<sup>2</sup>?
- 1.7 On what date does the operating strategy require major review? (Normally this is three months before the expiry date of the water licence).<sup>3</sup>

<sup>1</sup> Water use data, normally obtained from regular (e.g. monthly) water meter readings, must be reported to the Department of Water and Environmental Regulation within seven days of the end of the water year. The water year is defined as 12 months from the last day in the month from when the water licence was issued. See *Strategic policy 5.03: Metering the taking of water* (2009).

<sup>2</sup> Annual reports on compliance with the conditions/commitments of the water licence and operating strategy should follow the reporting structure detailed in *Operational policy 5.12: Hydrogeological reporting associated with a groundwater well licence* (2009). Annual compliance reports are usually due within eight weeks of the end of the water year.

<sup>3</sup> During the term of an operating strategy, any approved changes to the conditions/commitments of the water licence/operating strategy require the signatures of the licensee and Department of Water and Environmental Regulation on an operating strategy addendum. The licensee and department are each to retain a copy of the signed addendum.



## 2. Water source description

Describe the water sources and abstraction methods. Include a table of bores, their type (production or monitoring), coordinates, elevation, depth and construction details, and any dams and their storage capacity. Some details may also appear in a hydrogeological report if one has been done for the development.

### 2.1 Water source(s) description

#### (a) Groundwater

Bore name production or monitoring	Location coordinates <sup>4</sup> Zone:		Aquifer name	Elevation <sup>5</sup> (mAHD)	Depth (m)  <u>total</u> <u>screened</u>	Construction details (give bore logs to department)
	<u>northing</u>	<u>easting</u>				
1						
2						

#### (b) Surface water:

Dam name	Location coordinates <sup>4</sup> Zone:  <u>northing</u> <u>easting</u>	Name river/stream	On-stream or off- stream	Elevation (mAHD)	Maximum depth (m) & capacity (m <sup>3</sup> )	Construction details <sup>6</sup>
1						
2						

Direct pumping from stream	Location coordinates <sup>4</sup>	Pump capacity (litres/sec)	Description of river/stream (describe flow patterns, e.g. occasionally dries in summer)
1.			
2.			

2.2 Briefly describe the water distribution network including storages and pipelines (included on map in Section 7).

<sup>4</sup> MGA coordinates in GDA94 datum coordinates – easting/northing/zone

<sup>5</sup> Elevation in mAHD to top of casing (TOC). Also provide casing height above ground level in centimetres.

<sup>6</sup> Include height of dam wall (m), spillway depth (m), and Yes/No: under wall bypass installed



### 3. Identifying and managing impacts

Identify and manage how the taking of water may have impacts/pose risks to the water resource, other water users and the local ecology. Section 3 has links to Section 7: *Contingency programs*.

- (a) List issues that must be closely managed (e.g. effects on the aquifer, water level in a nearby wetland, impact on a nearby water user, saline intrusion)
- (b) List the management objective/s (e.g. ensuring a nearby wetland does not dry as a result of pumping)
- (c) Detail how you will comply with the management objective/s (usually a monitoring program)
- (d) Describe your response when the management objective is threatened

**For example:**

(a) Issue	(b) Management objective	(c) Measurement	(d) Management response <sup>7</sup>
<ul style="list-style-type: none"> <li>• reliable water supply</li> </ul>	<ul style="list-style-type: none"> <li>• have a supply of water totalling the water entitlement</li> </ul>	<ul style="list-style-type: none"> <li>• install water meters</li> </ul>	<ul style="list-style-type: none"> <li>• reduce demand for water (e.g. water use efficiency, smaller area irrigated)</li> <li>• purchase water on the water market</li> </ul>
<ul style="list-style-type: none"> <li>• salinity</li> </ul>	<ul style="list-style-type: none"> <li>• salinity of water used to be less than 1500 mg/L TDS</li> </ul>	<ul style="list-style-type: none"> <li>• sample monitoring bore monthly for salinity</li> </ul>	<ul style="list-style-type: none"> <li>• reduce pumping rate in some bores</li> <li>• pump to storage tanks in winter, reduce pumping in summer</li> </ul>
<ul style="list-style-type: none"> <li>• other users</li> </ul>	<ul style="list-style-type: none"> <li>• do not impact on neighbour's water availability</li> </ul>	<ul style="list-style-type: none"> <li>• measure water levels monthly in monitoring bore between production bore and neighbour</li> </ul>	<ul style="list-style-type: none"> <li>• reduce draw from bore(s) closest to neighbour</li> <li>• make good neighbour's supply</li> </ul>
<ul style="list-style-type: none"> <li>• wetland water level</li> </ul>	<ul style="list-style-type: none"> <li>• wetland not to dry out due to abstraction</li> </ul>	<ul style="list-style-type: none"> <li>• measure water levels monthly in wetland (depth board) and monitoring bore adjacent to wetland</li> </ul>	<ul style="list-style-type: none"> <li>• hydrogeologist to examine wetland/groundwater level relationship due to abstraction. Modify abstraction accordingly.</li> </ul>
<ul style="list-style-type: none"> <li>• dewatering</li> </ul>	<ul style="list-style-type: none"> <li>• keep watertable below specific level</li> </ul>	<ul style="list-style-type: none"> <li>• measure water levels in monitoring bore</li> </ul>	<ul style="list-style-type: none"> <li>• flooding: contact the department for emergency approval for installation of additional production/dewatering bores</li> </ul>
<ul style="list-style-type: none"> <li>• vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• abstraction does not impact on the health of natural vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• vegetation surveys, watertable monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• ecologist to examine water abstraction/watertable/vegetation health relationships. Modify abstraction accordingly.</li> </ul>

<sup>7</sup> You must discuss implementation of a water management response where a breach of a management objective is at risk BEFORE you do anything.



## 4. Operating rules

The use of a water source or a number of water sources (i.e. a scheme) is governed by operating rules. These operating rules should be clearly defined. Only fill in the tables relevant to your development.

### 4.1 For groundwater production bores and schemes

Bore name	Installed pumping capacity (litres/sec)	Annual abstraction (kL/year)	Operating protocols (e.g. is it a principal, secondary or a back-up bore)	Bore abstraction strategy (e.g. how does bore abstraction vary throughout the year, how will abstraction vary during the development lifetime)
1.				
2.				

### 4.2 For surface water sources and schemes

Dam <sup>8</sup> name	Annual abstraction (kL/year)	Minimum water storage level (m depth) to satisfy annual allocation (mAHD)	Seasonal pattern of water use (if water is to be taken during only winter or summer or throughout the year). If dam is filled by pumping from watercourse, describe operation.
1.			
2.			

Direct pumping from stream	Installed pumping capacity (m <sup>3</sup> /sec) and annual abstraction (kL/year)	Seasonal pattern of water production (if water is to be taken during only winter or summer or throughout the year)
1.		
2.		

<sup>8</sup> Includes situation whereby water is pumped from a watercourse to an off-stream dam



4.3 Operating rules when you use multiple sources conjunctively (e.g. use of surface water and groundwater sources – under separate water licences): which source will be used under what circumstances?

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4.4 Specify situations where you have adopted specific operating rules to minimise potential detrimental impacts, for example, reduce abstraction from bores near wetlands during summer.

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## 5. Monitoring and reporting

Monitoring requirements vary depending on the management objectives, industry, volume of water taken, water resource used and location of the draw points. Discuss your requirements with your Department of Water and Environmental Regulation regional office because some monitoring/measurements may not be necessary.

You must give the results of the monitoring program to us via annual reporting on compliance with licence conditions/commitments. Monitoring programs (complying with Australian standards – see *Operational policy 5.12: Hydrogeological reporting associated with a groundwater well licence (2009)*) – may be modified during the period of the water licence.

The compliance reports (also called ‘monitoring reports’) that you give us should have a section with any recommended changes to the monitoring program for our consideration. You can seek changes to conditions/commitments in an operating strategy by filling out an addendum to the operating strategy and sending it to us for consideration (see Appendix C of *Policy: Use of operating strategies in the water licensing process*).

5.1 List the purpose(s) of the water monitoring program (see Section 3: *Identifying and managing impacts* and any previous studies such as hydrogeological reports).

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5.2 Water use measurement<sup>9</sup>:

Draw point (either bore or surface water)	Description of meter installed (make, serial no., installation date <sup>10</sup> )	Meter maintenance/ calibration schedule	Frequency of recording meter data (e.g. on the same day every month)
1.			
2.			

5.3 Water level monitoring<sup>11</sup>:

Monitoring bore/ depth board	Location co-ordinates (MGAs)	Monitoring frequency (e.g. once a month)
1.		
2.		

5.4 Water quality monitoring (bores, dams, watercourse):

Name water quality sampling point (bore, dam, etc) <sup>12</sup>	Sampling location co-ordinates (MGAs)	Parameter being monitored (e.g. salinity, pH)	Monitoring frequency (e.g. salinity every six months)
1.			
2.			

## 6. Contingency program

Contingency planning is a component of good business practice. For developments with a water use licence, contingency planning is important so that you are prepared to change water use operations to prevent a breach of a water licence condition or commitment.

<sup>9</sup> See *Strategic policy 5.03: Metering the taking of water* (2009).

<sup>10</sup> If details are not yet known, send with first annual compliance report.

<sup>11</sup> For groundwater this is normally done from a water level monitoring bore (not production bore). Surface water monitoring of water levels may involve readings from a depth board in a stream, dam or wetland.

<sup>12</sup> Ensure names are consistent with those used in Section 2 and identified on map in Section 7.



Not all components of contingency programs will involve a breach of a water licence condition. For example, the issue of a water licence does not guarantee a reliable water supply. The licensee should therefore consider/plan for circumstances when there may be a shortfall in water supply – whether because of natural or mechanical reasons (e.g. bores fail to deliver required volume<sup>13</sup> or a drought occurs). Mining operations should have a contingency program if there is a failure in maintaining a water supply for ore processing water needs etc.

Some management actions use ‘trigger points’ that a monitoring program determines. Trigger points can represent a specific value (e.g. watertable declining more than 10 cm/year) that initiates a certain management response (e.g. have a water efficiency audit – investigate methods of reducing water demand). List all ‘trigger points’ and the corresponding contingency plan to implement.

6.1 Further discuss details given in Section 3: *Identifying and managing impacts* about what actions you might take if a management response does not limit a detrimental impact/circumstance.<sup>14</sup> Examples include: review water efficiency measures, reduce abstraction, revise management practices (may require an addendum to operating strategy) etc.

6.2 Contingency program for non-compliance of water licence terms and conditions including the commitments in this operating strategy<sup>15</sup>.

For example:

Issue: Water meter breaks down and commitment to submit monthly water use data may be breached.

Contingency program: Weekly check that water meters are working properly: have a spare water meter to replace a failed meter.

## 7. Associated maps

You must attach maps to the operating strategy with all relevant information, including:

- Topographic features and nearby town and road names, location of wetlands and water-dependant ecosystems. Include nearby bores and dams of neighbours. Include a scale on the map.
- Location of all production and monitoring bores with an identification name/number (see Section 2). Include monitoring points (see Section 5).
- Location of dams or stream pumpback draw points labelled on map with an identification name/number (see Section 2). Include monitoring points (see Section 5).
- Locations where water is used (e.g. irrigation areas, processing plant).
- Water source protection areas (where applicable).

<sup>13</sup> If a water source fails (i.e. bore or dam), you cannot construct a replacement until you have applied to the Department of Water and Environmental Regulation and been approved.

<sup>14</sup> Some details (e.g. reliable water supply) may not be water licence conditions/commitments.

<sup>15</sup> You must inform the Department of Water and Environmental Regulation immediately (i.e. within 14 days) of when you become aware of circumstances that may require a change in management response – particularly an inability to comply with the terms, conditions and commitments of the water licence.



## 8. Water use efficiency

Every licensee must take appropriate measures to ensure they use water effectively and efficiently (e.g. program of leak detection, ensuring correct operation of infrastructure etc.). Water licence applicants should see our *Operational policy 1.02: Policy on water conservation/efficiency plans (2009)*.

By addressing the section below, you may satisfy our requirement for producing a water conservation/efficiency plan. Contact your regional office to discuss your situation.

8.1 Briefly describe the water use efficiency measures you intend to implement (e.g. installation of trickle irrigation systems, reuse of water where possible and practicable, irrigation system to be computer controlled). Include a schedule of adoption of water use efficiency measures.

## 9. References

List of references, including any relevant documents including hydrogeological reports, company policies, EPA approved management plans etc.

## 10. Other

(as required by the Department of Water and Environmental Regulation)

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## 11. Summary list of commitments

This section summarises the operating strategy. It should include a list of your commitments to achieve the water resource management requirements. These commitments are part of the licence conditions so you must:

- carefully word them to ensure they are clear and easy to understand
- avoid ambiguous terms (e.g. significant impact)
- make sure they can be measured (quantifiable)
- make sure they can be easily assessed for compliance in reporting, audits or surveys.

Contact your regional office of the Department of Water and Environmental Regulation if you need to clarify the appropriate commitments.



**For example:**

1. The licensee will comply with this operating strategy as a condition of Water Resource Licence No. (xxxxxx) for the taking of water from the (xxxxxxxxxxxxxxxx) Water Resource Management Area.
2. The licensee will carry out and report to the department on the following monitoring program:

**Monitoring program (summary of Section 5)**

<u>Parameter measured</u>	<u>Sampling site</u>	<u>Frequency</u>	<u>Time</u>
Water use (water meter)	Bores #	<i>Monthly</i>	<i>First day of every month</i>
Salinity	Bores #	<i>Six-monthly</i>	<i>May, November</i>
Water levels	Bores #	<i>Six-monthly</i>	<i>May, November</i>

3. The licensee will inform the department of any likely breach in the commitments of this operating strategy within 14 days of becoming aware of the possible breach. This also includes the implementation of a contingency response.
4. The licensee will submit the annual water use (metering) report and the compliance (monitoring) report within seven days and 28 days of the end of the water year respectively, in formats described in strategic policy 5.03 and operational policy 5.12 respectively.
5. The licensee will resubmit the operating strategy to the department for review three months before the expiry date of the strategy.



## Appendix B

### Guideline for producing a detailed water resource operating strategy associated with a water licence

- The Department of Water and Environmental Regulation may ask you to produce a water resource operating strategy in association with a water licence application: a ‘basic’ strategy for low-risk water-resource developments and a detailed strategy for higher-risk projects.
- You must write your report in association with Policy: *Use of operating strategies in the water licensing process* (2019), and in the state’s north-west, the *Pilbara water in mining guideline* (2009).
- You should use simple and clear terms, minimising vague phrases such as ‘avoiding significant impacts’. Instead, you should present material that is measurable; for example, ‘we will review and modify bore pumping rates according to Department of Water and Environmental Regulation recommendations if water levels decline greater than one metre from the lowest historical recorded water level’.
- This document is a guideline and may not contain all the relevant issues for a water licence applicant who must produce an operating strategy.
- You may not need to address all issues in this guideline – you should contact your regional office of the Department of Water and Environmental Regulation to discuss your requirements.
- See our addendum to change an operating strategy during the term of the licence.

**Name of water licence applicant/licensee** .....

**Name of development project or purpose:**.....

**Legal description and address of land where (a) water is taken, and (b) water is used (if different)** .....

*“I understand that the commitments given in the attached operating strategy will be a condition of an associated water licence if approved and that a breach of a commitment or any licence condition may be an infringement of the Rights in Water and Irrigation Act 1914”:*

#### **Signatures**

*Person legally responsible for water licence*

.....**Date**..... printed name:

*Approved by Department of Water and Environmental Regulation delegated*

authority.....**Date**..... printed name:



## 1. Administrative requirements

This section outlines the administrative arrangements necessary to ensure you adhere to your strategy.

1.1 List any other water licences already issued that are relevant to this operating strategy, otherwise write 'none'.

1.2 Why does this development require a 'detailed' operating strategy? (Factors might include: requires a large water allocation, is in an environmentally sensitive area, is in an area of intense competition for water, is close to other water users, is a project of state significance etc.)

1.3 Does the water licence involve staged development? If so, please attach an account of anticipated water demand for each stage.

1.4 Has there been any investigation and reporting on the water source and/or environment involving the development? (e.g. a hydrogeological, hydrological or environmental report). If 'yes', attach brief summary.

1.5 Is your development within an area covered by a water resource management/allocation plan that the Department of Water and Environmental Regulation has produced? If yes, please review plan and determine if there are any specific water resource management issues you should address in an operating strategy.

1.6 Person/position responsible for implementing operating strategy and contact details including phone number and residential/ postal address.

1.7 What are the reporting dates for the: (1) water use (metering) data<sup>16</sup> and (2) the operating strategy compliance report<sup>17</sup>?

1.8 On what date does the operating strategy require major review? (Normally this is three to six months before the expiry date of the water licence).<sup>18</sup>

<sup>16</sup> Water use data, normally obtained from regular (e.g. monthly) water meter readings, must be reported to the Department of Water and Environmental Regulation within seven days of the end of the water year. The water year is defined as 12 months from the last day in the month from when the water licence was issued. See *Strategic policy 5.03: Metering the taking of water* (2009).

<sup>17</sup> Annual reports on compliance with the conditions/commitments of the water licence and operating strategy should follow the reporting structure detailed in *Operational policy 5.12: Hydrogeological reporting associated with a groundwater well licence* (2009). Annual compliance reports are usually due within eight weeks of the end of the water year.

<sup>18</sup> During the term of an operating strategy, any approved changes to the conditions/commitments of the water licence/operating strategy require the signatures of the licensee and Department of Water and Environmental Regulation on an operating strategy addendum. The licensee and department are each to retain a copy of the signed addendum.



## 2. Water source description

Describe the water sources and abstraction methods. Include a table of bores, their type (production or monitoring), coordinates, elevation, depth and construction details, and any dams and their storage capacity. Some details may also appear in a hydrogeological report if one has been done for the development.

### 2.1 Water source(s) description:

#### 2.1.1 Groundwater:

Provide bore details:

Bore name production or monitoring	Location coordinates <sup>19</sup> Zone:		Aquifer name	Elevation <sup>20</sup> (mAHD)	Depth (m)		Construction details (give bore logs to department)
	<u>northing</u>	<u>easting</u>			<u>total</u>	<u>screened</u>	
1.							
2.							

#### 2.1.2 Surface water:

Provide surface water abstraction details:

Dam name	Location coordinates <sup>4</sup> Zone:		Name river/ stream	On- stream or off- stream	Elevation (mAHD)	Maximum depth (m) & capacity (m <sup>3</sup> )	Construction details <sup>21</sup>
	<u>northing</u>	<u>easting</u>					
1.							
2.							

Direct pumping from stream	Location coordinates <sup>4</sup>	Pump capacity (litres/sec)	Description of river/stream (describe flow patterns, e.g. occasionally dries in summer)
1.			
2.			

2.2 Provide a detailed description of water distribution network including storages and pipelines (included on map in Section 8).

<sup>19</sup> MGA coordinates in GDA94 datum coordinates – easting/northing/zone

<sup>20</sup> Elevation in mAHD to top of casing (TOC). Also provide casing height above ground level in centimetres.

<sup>21</sup> include height of dam wall (m), spillway depth (m), and Yes/No: under wall bypass installed



### 3. Identifying and managing impacts

Identify and manage how the taking of water may have impacts/pose risks to the water resource, other water users and the local ecology. Section 3 has links to Section 7: *Contingency programs*.

- (a) List issues that must be closely managed (e.g. effects on the aquifer, water level in a nearby wetland, impact on a nearby water user, saline intrusion)
- (b) List the management objective/s (e.g. ensuring a nearby wetland does not dry as a result of pumping)
- (c) Detail how you will comply with the management objective/s (usually a monitoring program)
- (d) Describe your response when the management objective is threatened

**For example:**

(e) Issue	(f) Management objective	(g) Measurement	(h) Management response <sup>22</sup>
<ul style="list-style-type: none"> <li>• reliable water supply</li> </ul>	<ul style="list-style-type: none"> <li>• have a supply of water totalling the water entitlement</li> </ul>	<ul style="list-style-type: none"> <li>• install water meters</li> </ul>	<ul style="list-style-type: none"> <li>• reduce demand for water (e.g. water use efficiency, smaller area irrigated)</li> <li>• purchase water on the water market</li> </ul>
<ul style="list-style-type: none"> <li>• salinity</li> </ul>	<ul style="list-style-type: none"> <li>• salinity of water used to be less than 1500 mg/L TDS</li> </ul>	<ul style="list-style-type: none"> <li>• sample monitoring bore monthly for salinity</li> </ul>	<ul style="list-style-type: none"> <li>• reduce pumping rate in some bores</li> <li>• pump to storage tanks in winter, reduce pumping in summer</li> </ul>
<ul style="list-style-type: none"> <li>• other users</li> </ul>	<ul style="list-style-type: none"> <li>• do not impact on neighbour's water availability</li> </ul>	<ul style="list-style-type: none"> <li>• measure water levels monthly in monitoring bore between production bore and neighbour</li> </ul>	<ul style="list-style-type: none"> <li>• reduce draw from bore(s) closest to neighbour</li> <li>• make good neighbour's supply</li> </ul>
<ul style="list-style-type: none"> <li>• wetland water level</li> </ul>	<ul style="list-style-type: none"> <li>• wetland not to dry out due to abstraction</li> </ul>	<ul style="list-style-type: none"> <li>• measure water levels monthly in wetland (depth board) and monitoring bore adjacent to wetland</li> </ul>	<ul style="list-style-type: none"> <li>• hydrogeologist to examine wetland/groundwater level relationship due to abstraction. Modify abstraction accordingly.</li> </ul>
<ul style="list-style-type: none"> <li>• dewatering</li> </ul>	<ul style="list-style-type: none"> <li>• keep watertable below specific level</li> </ul>	<ul style="list-style-type: none"> <li>• measure water levels in monitoring bore</li> </ul>	<ul style="list-style-type: none"> <li>• flooding: contact the department for emergency approval for installation of additional production/dewatering bores</li> </ul>
<ul style="list-style-type: none"> <li>• vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• abstraction does not impact on the health of natural vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• vegetation surveys, watertable monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• ecologist to examine water abstraction/watertable/vegetation health relationships. Modify abstraction accordingly.</li> </ul>

<sup>22</sup> You must discuss implementation of a water management response where a breach of a management objective is at risk BEFORE you do anything.



## 4. Operating rules

The use of a water source or a number of water sources (i.e. a scheme) is governed by operating rules. These operating rules should be clearly defined.

Only fill in the tables relevant to your development.

### 4.1 For groundwater production bores and schemes

Bore name	Installed pumping capacity (litres/sec)	Annual abstraction (kL/year)	Operating protocols (e.g. is it a principal, secondary or a back-up bore)	Bore abstraction strategy (e.g. how does bore abstraction vary throughout the year, how will abstraction vary during the development lifetime)
1.				
2.				

### 4.2 For surface water sources and schemes

Dam <sup>23</sup> name	Annual abstraction (kL/year)	Minimum water storage level (m depth) to satisfy annual allocation (mAHD)	Seasonal pattern of water use (i.e. if water is to be taken during only winter or summer or throughout the year). If dam is filled by pumping from watercourse, describe operation.
1.			
2.			

Direct pumping from stream	Installed pumping capacity (m <sup>3</sup> /sec) and annual abstraction (kL/year)	Seasonal pattern of water production (if water is to be taken during only winter or summer or throughout the year)
1.		
2.		

<sup>23</sup> Includes situation whereby water is pumped from a watercourse to an off-stream dam



4.3 Operating rules when you use multiple sources conjunctively (e.g. use of surface water and groundwater sources – under separate water licences): which source will be used under what circumstances?

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4.4 Specify situations where you have adopted specific operating rules to minimise potential detrimental impacts, for example, reduce abstraction from bores near wetlands during summer.

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## 5. Monitoring and reporting

Monitoring requirements vary depending on the management objectives, industry, volume of water taken, water resource used and location of the draw points. Discuss your requirements with your Department of Water and Environmental Regulation regional office because some monitoring/measurements may not be necessary.

You must give the results of the monitoring program to us via annual reporting on compliance with licence conditions/commitments. Monitoring programs (complying with Australian standards – see *Operational policy 5.12: Hydrogeological reporting associated with a groundwater well licence (2009)*) – may be modified during the period of the water licence.

The compliance reports (also called ‘monitoring reports’) that you give us should have a section with any recommended changes to the monitoring program for our consideration. You can seek changes to conditions/commitments in an operating strategy by filling out an addendum to the operating strategy and sending it to us for consideration (see Appendix C of *Policy: Use of operating strategies in the water licensing process*).

5.1 List the purpose(s) of the water monitoring program (see Section 3: *Identifying and managing impacts* and any previous studies such as hydrogeological reports).

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5.2 Water use measurement<sup>24</sup>:

Draw point (either bore or surface water)	Description of meter installed (make, serial no., installation date <sup>25</sup> )	Meter maintenance/calibration schedule	Frequency of recording meter data (e.g. on the same day every month)
1.			
2.			

5.3 Water level monitoring<sup>26</sup>:

Monitoring bore/depth board	Location co-ordinates (MGAs)	Monitoring frequency (e.g. once a month)
1.		
2.		

5.4 Water quality monitoring (bores, dams, watercourse):

Name water quality sampling point (bore, dam, etc) <sup>27</sup>	Sampling location coordinates (MGAs)	Parameter being monitored (e.g. salinity, pH)	Monitoring frequency (e.g. salinity every six months)
1.			
2.			

<sup>24</sup> See *Strategic policy 5.03: Metering the taking of water* (2009).

<sup>25</sup> If details are not yet known, send with first annual compliance report.

<sup>26</sup> For groundwater this is normally done from a water level monitoring bore (not production bore). Surface water monitoring of water levels may involve readings from a depth board in a stream, dam or wetland.

<sup>27</sup> Ensure names are consistent with those used in Section 2 and identified on map in Section 8.



5.5 Environmental monitoring (e.g. vegetation, fauna):

- purpose of monitoring
- detailed description of methodology
- monitoring frequency and reporting details

## 6. Environmental impact management<sup>28</sup>

6.1 The Minister for Environment has set environmental water management conditions (i.e. Ministerial Conditions) on the water resource licence. [If not, go to 6.2]

- Provide details of environmental studies you have undertaken.
- List the Ministerial Conditions and describe how the project's water resource management program will satisfy these conditions.

6.2 The Minister for Environment has not set environmental water management conditions on the water resource licence:

- Identify potential environmental impacts from water abstraction<sup>29</sup> and how operation of the water supply will minimise potential impacts (e.g. water level decline from abstraction may affect health of vegetation – minimise abstraction from bores close to vegetation in summer) (see Section 5.5). Describe any water-dependent ecosystems that could be impacted by your development's water abstraction.
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6.3 Identify potential impacts to existing water users from water abstraction and how water management will minimise potential impacts (e.g. groundwater: water level decline from abstraction may impact neighbour's bore – install monitoring bore between neighbour and own bore to monitor impact and reduce abstraction if necessary; surface water: dam bypass set at XXmAHD enables a minimum flow rate of XXm/sec). Illustrate locations of nearby users and monitoring bores, dam bypass etc. on Section 8 map.

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6.4 If you are taking surface water, describe how your considerations of downstream riparian use and environmental needs.

<sup>28</sup> The Environmental Protection Authority (EPA) may need to review some projects. To avoid delays in project approval(s), you should discuss this issue with the department before completing this section.

<sup>29</sup> Environmental impacts would normally already have been identified in a hydrogeological report that we require to assess a water licence application (see our operational policy 5.12 (2009)). Normally an environmental consultant would be engaged at the licence applicant's expense to assess environmental impacts.



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6.5 Where proposed water abstraction is from the same water resource that existing social activities draw on, you may need to investigate how your proposed water abstraction might impact on these existing activities (e.g. recreational fishing, canoeing etc.). Where you find potential impacts on social activities, describe how you will manage the proposed water abstraction to limit such impact(s).

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## 7. Contingency program

Contingency planning is a component of good business practice. For developments with a water use licence, contingency planning is important so that you are prepared to change water use operations to prevent a breach of a water licence condition or commitment.

Not all components of contingency programs will involve a breach of a water licence condition. For example, the issue of a water licence does not guarantee a reliable water supply. The licensee should therefore consider/plan for circumstances when there may be a shortfall in water supply – whether because of natural or mechanical reasons (e.g. bores fail to deliver required volume<sup>30</sup> or a drought occurs). Mining operations should have a contingency program if there is a failure in maintaining a water supply for ore processing water needs etc.

Some management actions use ‘trigger points’ that a monitoring program determines. Trigger points can represent a specific value (e.g. watertable declining more than 10 cm/year) that initiates a certain management response (e.g. have a water efficiency audit – investigate methods of reducing water demand). You may use the table below to list trigger points, especially where there is a tiered structure to management responses.

An example of a tiered approach is when a certain salinity (e.g. 1500 mg/L TDS) is detected from water sampling – the first management response might be to reduce the pumping rate from a nearby bore while increasing pumping from a bore with lower salinity. If the bore with the reduced pumping rate does not show signs of recovery in 12 months, the second response could be to cease all abstraction from that bore.

7.1 Further discuss the details you gave in Section 3: *Identifying and managing impacts* about what actions you might take if a management response does not limit a detrimental impact/circumstance.<sup>31</sup> Examples include: review water efficiency measures, reduce abstraction, revise management practices (may require an addendum to operating strategy) etc.

<sup>30</sup> If a water source fails (i.e. bore or dam), you cannot construct a replacement until you have applied to the Department of Water and Environmental Regulation and been approved.

<sup>31</sup> Some of details (e.g. reliable water supply) may not be water licence conditions/commitments.



7.2 Contingency program for non-compliance of water licence terms and conditions including the commitments in this operating strategy.<sup>32</sup>

For example:

Issue: Water meter breaks down and commitment to submit monthly water use data may be breached.

Contingency program: Weekly check that water meters are working properly: have a spare water meter to replace a failed meter.

7.3 Drought and other circumstances of limited water supply (e.g. mechanical breakdown):

- Identify the trigger level for adopting contingency plan (e.g. dam level falls below xxxx mAHD, groundwater level drops below bore depth)
- Describe contingency plan:
  - e.g. low dam level: reduce water demand, buy water on the water market, cart water
  - e.g. bore failure: reduce water demand, use deeper standby bore, buy water on water market, drill deeper bore

7.4 Flooding (particularly relevant to mining operations):

- Identify the trigger level for adopting contingency plan (e.g. infrastructure damage to bore (well head), erosion of dam wall)
- Describe contingency plan:
  - e.g. bore infrastructure damage: cart water
  - e.g. dam wall failure: install in-stream pumps

7.5 Unexpected aquifer response (e.g. water levels dropping faster than expected):

- Identify trigger level for adopting contingency plan (e.g. watertable dropping 50 cm per month)
- Describe contingency plan (e.g. reduce abstraction from some bores, increase from others)

7.6 Unexpected water quality trends (e.g. high nutrient levels, exceed ANZECC guidelines for drinking water quality):

- Identify trigger level for adopting contingency plan (e.g. algal blooms in dam)
- Describe contingency plan (e.g. install nutrient stripping basin (e.g. vegetation) upstream of dam inflow)

<sup>32</sup> You must inform the Department of Water and Environmental Regulation immediately (i.e. within 14 days) of when you become aware of circumstances that may require a change in management response – particularly an inability to comply with the terms, conditions and commitments of the water licence.



#### 7.7 Unexpected environmental impacts (e.g. vegetation impacts)

- Identify trigger level for adopting contingency plan (e.g. vegetation adjacent to a wetland shows signs of water deficiency stress)
- Describe contingency plan: (e.g. reduce abstraction from bores closest to wetland)

#### 7.8 Other

### 8. Associated maps

You must attach maps to the operating strategy with all relevant information, including:

- Topographic features and nearby town and road names, location of wetlands and water-dependant ecosystems. Include nearby bores and dams of neighbours. Include a scale on the map.
- Location of all production and monitoring bores with an identification name/number (see Section 2). Include monitoring points (see Section 5).
- Location of dams or stream pumpback draw points labelled on map with an identification name/number (see Section 2). Include monitoring points (see Section 5).
- Locations where water is used (e.g. irrigation areas, processing plant).
- Water source protection areas (where applicable).
- Water-dependent ecosystems described in Section 6.2 and nearby environmental protection areas (e.g. EPP conservation category wetlands).

### 9. Water use efficiency

Every licensee must take appropriate measures to ensure they use water effectively and efficiently (e.g. program of leak detection, ensuring correct operation of infrastructure etc.). Water licence applicants should see our *Operational policy 1.02: Policy on water conservation/efficiency plans (2009)*.

By addressing the section below, you may satisfy our requirement for producing a water conservation/efficiency plan. Contact your regional office to discuss your situation.

- 9.1 Provide a detailed description of the water use efficiency measures you intend to implement (e.g. installation of trickle irrigation systems, reuse of water where possible and practicable, irrigation system to be computer controlled). Include a schedule of adoption of water use efficiency measures.



9.2 Discuss the potential for adoption of further water use efficiency measures.

## 10. References

List of references, including any relevant documents including hydrogeological reports, company policies, EPA approved management plans etc.

## 11. Other

(as required by the Department of Water and Environmental Regulation)

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## 12. Summary list of commitments

This section summarises the operating strategy. It should include a list of your commitments to achieve the water resource management requirements. These commitments are part of the licence conditions so you must:

- carefully word them to ensure they are clear and easy to understand
- avoid ambiguous terms (e.g. significant impact)
- make sure they can be measured (quantifiable)
- make sure they can be easily assessed for compliance in reporting, audits or surveys.

Contact your regional office of the Department of Water and Environmental Regulation if you need to clarify the appropriate commitments.

**For example:**

6. The licensee will comply with this operating strategy as a condition of Water Resource Licence No. (xxxxxx) for the taking of water from the (xxxxxxxxxxxxxxxx) Water Resource Management Area.
7. The licensee will carry out and report to the department on the following monitoring program:

**Monitoring program (summary of Section 5)**

<u>Parameter measured</u>	<u>Sampling site</u>	<u>Frequency</u>	<u>Time</u>
Water use (water meter)	Bores #	Monthly	First day of every month
Salinity	Bores #	Six-monthly	May, November
Water levels	Bores #	Six-monthly	May, November

8. The licensee will inform the department of any likely breach in the commitments of this operating strategy within 14 days of becoming aware of the possible breach. This also includes the implementation of a contingency response.
9. The licensee will submit the annual water use (metering) report and the compliance (monitoring) report within seven days and 28 days of the end of the water year respectively, in formats described in strategic policy 5.03 and operational policy 5.12 respectively.
10. The licensee will resubmit the operating strategy to the department for review three months before the expiry date of the strategy.



Government of **Western Australia**  
Department of **Water and Environmental Regulation**

## Appendix C

### Addendum to a water resource operating strategy associated with a water licence issued by the Department of Water and Environmental Regulation

Name of licensee: .....

This addendum applies to:

- Water resource licence number: .....
- The associated water resource operating strategy approved by the Department of Water and Environmental Regulation on  
(date) .....

#### Intent

The intent of this addendum is to formalise the licensee's commitment to .....  
..... [write general intent of addendum] .....

#### Commitment(s)

The licensee will comply with the commitment to: .....  
..... [write new commitment or change to existing commitment] .....

#### Amending the addendum to the water resource operating strategy

The licensee may apply to amend this addendum at any time, to account for exceptional circumstances<sup>33</sup>

#### Agreement

***I acknowledge that compliance with the approved addendum to the operating strategy is a condition of holding a licence, as issued under Section 5C of the Rights in Water and Irrigation Act 1914, to take and use water and I hereby agree to implement the commitment(s) within this operating strategy addendum.***

#### Signatures

Person legally responsible for water licence

..... **Date**..... printed name:

Approved by Department of Water and Environmental Regulation delegated

authority..... **Date**..... printed name:

<sup>33</sup> Licensee must continue to abide by the existing condition/commitment until the department approves any change.



# Glossary

<b>Term</b>	<b>Definition</b>
<b>agreement</b>	A form of lease and occurs via the temporary assignment of a licensed entitlement, or part thereof, to another party. This second party is then able to operate under the licence for the period of the agreement. Usually under agreements the water is taken from a new location, requiring an assessment of the likely impacts. Also called a 'temporary transaction'.
<b>allocation</b>	The volume of water which has been allocated for use from a water resource each year.
<b>allocation limit</b>	The volume of water that can be harvested each year from a water resource with acceptable impacts.
<b>environment</b>	Living things, their physical, biological and social surrounding and interactions between all of these.
<b>environmental value</b>	Also known as beneficial uses, is a value or use of the environment or any element or segment of the environment which is conducive to public benefit, welfare, safety, health or aesthetic enjoyment and which requires protection from pollution sources.
<b>environmental water provisions</b>	The water volume that is provided to maintain the environment, including the social and cultural requirements, as a result of the water allocation decision-making process. Environmental water provisions take into account the ecological, social, cultural and economic impacts. They may meet in part or in full the ecological water requirements.
<b>groundwater</b>	The water that occurs in pore spaces and fractures in rocks beneath the ground surface.
<b>trade</b>	A permanent trade of a water entitlement to another person and the water will be taken from another location.
<b>transfer</b>	Where an entitlement is permanently transferred to another person but the water will be taken from the same location. An example of a transfer is when a licensee sells their property operation (e.g. a market garden) together with the water entitlement to another person who will continue with the operation.
<b>water entitlement</b>	The volume of water that can be harvested, under licence, each year from a water resource with acceptable impacts.



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**Term**

**Definition**

**water entitlement transaction**

The ability of a licence holder to trade, transfer, or form an agreement (i.e. transact) for all or part of the licensed entitlement, to be taken by another person. In most cases an exchange of a WET involves a monetary exchange although in some instances transfers may occur without recompense (e.g. a deceased estate).



## References

- ARMCANZ 2000, *Australian guidelines for water quality monitoring and reporting, National Water Quality Management Strategy no. 7*, Agriculture and Resource Management Council of Australia and New Zealand, Canberra, October.
- Department of Water 2008, *Guidelines for water meter installation*, Allocation note, Department of Water, Perth.
- 2008, *Licence conditions related to metering requirements*, Allocation note, Department of Water, Perth.
- 2009, *Pilbara water in mining guideline*, WRAP no. 32, Department of Water, February.
- 2019, *Policy: Water conservation/efficiency plans*, Department of Water, Perth, September.
- 2009, *Operational policy no. 5.12: Hydrogeological reporting associated with a groundwater well licence*, Department of Water, Perth, November.
- Department of Water and Environmental Regulation 2019, *Policy: Measuring the taking of water*, Department of Water and Environmental Regulation, Perth, September.
- 2019, *Policy: Timely submission for required further information*, Department of Water and Environmental Regulation, Perth, September.
- 2019, *Policy: Water entitlement transactions for Western Australia*, Department of Water and Environmental Regulation, Perth, September.
- 2019, *Policy: Management of unused water entitlements*, Department of Water and Environmental Regulation, Perth, November.
- Government of Western Australia, *Rights in Water and Irrigation Act 1914*, State Law Publisher, Perth.
- 2003, *A state water strategy for WA - securing our water future*, Perth.
- Water and Rivers Commission 2000, *Statewide policy no. 3: Policy statement on sharing water*, Water and Rivers Commission, Perth, May.
- 2003, *Statewide policy no. 9: Water licensing, staged developments*, Water and Rivers Commission, Perth, November.



## Regional enquiries

Please direct any enquiries about this policy or the management of water resources to the following regional offices:

### Kimberley Region

27 Victoria Highway

Kununurra WA 6743

Telephone: (08) 9166 4100

Facsimile (08) 9168 3174

### Swan Avon Region

7 Ellam Street

Victoria Park WA 6100

Telephone (08) 6250 8000

Facsimile (08) 6250 8050

### South Coast Region

120 Albany Highway

Albany WA 6330

Telephone: (08) 9841 0100

### Mandurah

107 Breakwater Parade

Mandurah Ocean Marine

Mandurah WA 6210

Telephone (08) 9550 4212

Facsimile (08) 9581 4560

### South West Region

35-39 McCombe Road

Davenport WA 6230

Telephone: (08) 9726 4111

Facsimile (08) 9726 4100

### Mid-West Gascoyne Office

20 Gregory Street

Geraldton WA 6530

Telephone: (08) 9841 7400