



Submission on the

Draft NSW Aquifer Interference Policy – Stage 1

3 May 2012

The EDO Mission Statement:

To empower the community to protect the environment through law, recognising:

- the importance of public participation in environmental decision making in achieving environmental protection
- the importance of fostering close links with the community
- the fundamental role of early engagement in achieving good environmental outcomes
- the importance of indigenous involvement in protection of the environment
- the importance of providing equitable access to EDO services around NSW

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Introduction

The Environmental Defender's Office NSW (EDO) welcomes the opportunity to contribute to the development of Stage 1 of the NSW Government's Aquifer Interference Policy (AIP).

The EDO is a community legal centre with 25 years' experience in public interest environmental and planning law matters. Through our litigation, law reform and outreach activities, we have a strong history of engagement with government regulation of the State's water resources. In particular, we have provided submissions on regulation of water in the State,¹ and represented clients in court proceedings concerning water management issues.² Recognising the close relationship between aquifer management and mining and coal seam gas (CSG) extraction activities, we also note our strong history of engagement with these issues. To date in the 2012 financial year, we have conducted ten workshops to educate members of the community on the law concerning CSG and mining. We have also provided submissions to various government consultations and inquiries on mining and related topics. These include submissions to,³ and an appearance at,⁴ the NSW Legislative Council Inquiry into Coal Seam Gas; a submission on the NSW Coal and Gas Strategy,⁵ and a submission to the NSW Planning Review Issues Paper.⁶ We have also published a discussion paper on mining law in NSW.⁷ In addition, we have undertaken public interest litigation on behalf of a number of clients concerned about the environmental impacts of CSG and mining developments.⁸

This submission has been prepared with input from our in-house scientific advisors and the EDO Scientific Expert Register.

The purpose of the AIP is to explain the role and requirements of the NSW Office of Water in relation to licensing and approvals for aquifer interference activities. At the outset, we submit that the legal status of the AIP must be clarified. As detailed below, we have concerns regarding inconsistencies with current legal requirements.

¹ See, for example, Environmental Defender's Office (NSW), *Consultation on the Draft Water Management (General) Regulation 2011*, Environmental Defender's Office (NSW), 22 July 2011, www.edo.org.au/edonsw/site/pdf/subs/110722water_management_regs.pdf; *Submission to Standing Committee on Natural Resource Management (Climate Change) – Sustainable Water Management Inquiry*, March 2010, www.edo.org.au/edonsw/site/pdf/subs/100315water_management.pdf; Environmental Defender's Office NSW, *Submission on the First Biennial Assessment of the National Water Initiative – NSW Implementation*, February 2007, www.edo.org.au/edonsw/site/pdf/subs/070212nwi_nsw.pdf.

² See, for example, *Nature Conservation Council of New South Wales Inc v The Minister Administering the Water Management Act 2000* [2005] NSCA 9.

³ www.edo.org.au/edonsw/site/pdf/subs/110912csg_inquiry.pdf;
www.edo.org.au/edonsw/site/pdf/subs/110912csg_inquiry_appendix1.pdf.

⁴ www.edo.org.au/edonsw/site/pdf/subs/111208csg_inquiry.pdf.

⁵ www.edo.org.au/edonsw/site/pdf/subs/110415nsw_coal_gas_strategy.pdf.

⁶ www.edo.org.au/edonsw/site/pdf/subs/120314ncc_edo_tec_joint_sub_planning_system_review_issues.pdf.

⁷ www.edo.org.au/edonsw/site/pdf/pubs/110628mining_law_discussion_paper.pdf.

⁸ See, for example, *Barrington-Gloucester-Stroud Preservation Alliance Incorporated v Planning Assessment Commission and AGL Upstream Infrastructure Investments Pty Limited* (points of claim available at www.edo.org.au/edonsw/site/pdf/casesum/110705bgspa_points_of_claim.pdf); *Bulga Milbrodale Progress Association Inc v Minister for Planning & Ors*, http://www.edo.org.au/edonsw/site/casework_key.php#bulga; *Ironstone Community Action Group Inc v NSW Minister for Planning and Duralie Coal Pty Ltd* [2011] NSWLEC 195.

Recommendation 1: Clarify the legal status of the AIP.

At this stage, the AIP considers only the roll-out of aquifer interference approvals in relation to groundwater sources covered by the *Water Management Act 2000* (NSW), and underlying Biophysical Strategic Agricultural Land.⁹ In this submission, we highlight our key concerns about the framework and detail of the AIP. These concerns relate to the following matters:

1. Lack of prioritisation of water source connectivity considerations;
2. Inappropriate consideration of sustainability and cumulative environmental impacts;
3. Exemptions relating to State significant mining and CSG activities;
4. Framing of technical aspects of the policy, particularly regarding the minimal harm criteria thresholds set out in Appendix 1 to the Policy.

We make the following recommendations:

Recommendation 1: Clarify the legal status of the AIP.

Recommendation 2: Prioritise water source connectivity as the key consideration in all aspects of the AIP.

Recommendation 3: Base all water access licence limits on the sustainable yield of the water source in question.

Recommendation 4: Ensure there is further public consultation on the proposed regulation.

Recommendation 5: Remove blanket and volumetric-based exemptions from requirements to obtain water access licences.

Recommendation 6: State significant mining and CSG developments should not be exempt from requirements to obtain aquifer interference approvals.

Recommendation 7: Link minimum harm criteria thresholds to environmental impacts and risk.

1. Lack of prioritisation of water source connectivity considerations

We emphasise that any regulatory framework for aquifer management must have connectivity as a primary consideration. Our use of the term ‘connectivity’ includes reference not only to the contiguous nature of water within a single aquifer, but also to connections between two or more aquifers, and between aquifers and surface water sources. This means that any authorisation to interfere with the structure of an aquifer, to take water from it or to re-inject water into it, must take full account of the direct and indirect implications of such an activity for all other connected water sources. We are concerned that the AIP does not provide sufficiently for prioritisation of this essential consideration.

⁹ AIP, 4.

In particular, we note that the policy only applies where Biophysical Strategic Agricultural Land (BSAL) and aquifers overlap. This means that parts of the same aquifer which fall outside BSAL areas are not captured. The AIP therefore fails to account for the fact that what happens in one part of the aquifer will affect the entire aquifer.

Recommendation 2: Prioritise water source connectivity as the key consideration in all aspects of the AIP.

2. Inadequate consideration of sustainability and cumulative environmental impacts

All determinations made pursuant to the AIP must be underpinned by meaningful implementation of the principles of sustainable water resource use. This is particularly the case for water access licences – both in relation to setting licence limits, and in determining appropriate exemption categories.

In relation to licensing, the AIP provides that

*[l]icences for aquifer interference activities will be amended prior to the relevant water sharing plan commencing, to include a condition specifying the maximum volume of water which may be taken. This will be based on actual historical use data (where available), or estimates from calculations or modelling...*¹⁰

In our view, the determination of limits for water licences should be based not on historical data, but on estimates of sustainable use that are underpinned by sound science.

Similarly, the AIP sets out a number of proposed exemptions from the requirement to obtain a water access licence.¹¹ Among these, it distinguishes between low use and high use groundwater sources, but allows, in both of these categories, an exemption from licensing for any activities that are extracting groundwater at less than 5 litres per second, and taking no more than 3 ML per year.¹²

In our view, a blanket exemption for all activities taking less than 3 ML per year does not provide adequate safeguards for the ongoing viability of the water source, especially when it is considered that this volume of water is greater than that of an Olympic swimming pool. The exemption cannot account for the cumulative impact of an indefinite number of these smaller-scale activities accessing a single water source. An exemption calculated by volume of water taken, rather than by the yielding capacity of the source in question, may create deleterious impacts on the water source and its surrounding environment, particularly for smaller aquifers and as concerns groundwater dependent ecosystems. In some cases, a small amount of drawdown in a water table aquifer may still have a significant impact on matters including surface water, vegetation,

¹⁰ AIP, 7.

¹¹ AIP, 13.

¹² This is in addition to the provisions of the *Water Management (General) Regulation 2011*, which presently provides for exemptions for fossicking and prospecting activities taking less than 3 ML - *Water Management (General) Regulation 2011*, sch 5, cl 7.

and downstream aquifer units, while in other cases the groundwater system or environment may be much more resilient. While the policy makes some provision for dealing with 'unforeseen impacts', safeguards are required in relation to cumulative impacts from the outset. For these reasons, we also oppose any blanket exemptions for other activities, such as irrigation, as they contain potential to exceed the sustainable capacity of the aquifer.¹³ Furthermore, it remains to be seen whether the proposed Aquifer Interference Regulation will provide adequately for alterations to licence exemptions if sources move from low use to high use, or where individuals' extraction levels increase.

In addition, the framework for determining applications¹⁴ allows for a take of water even where the proponent cannot obtain necessary licences as long as they "demonstrate that the proposal includes strategies to **prevent any more than minimal harm** occurring to any water source, their dependent ecosystems or other water users". This undermines the use of licences and provides for further unspecified exemptions to licensing requirements.

The broad exemptions from licensing requirements discussed in this section are arguably also inconsistent with the water management principles set out in the *Water Management Act 2000*. These principles provide, relevantly, that

- the cumulative impacts of water management licences and approvals and other activities on water sources and their dependent ecosystems, should be considered and minimised;¹⁵
- the carrying out of aquifer interference activities must avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and, where possible, land must be rehabilitated, and the impacts of the carrying out of aquifer interference activities on other water users must be avoided or minimised.¹⁶

For these reasons, we recommend that the criteria for setting water access licence limits, and for determining exemptions from access licence requirements, be reviewed and strengthened. EDO also submits that there must be further public consultation on the proposed Regulation.

Recommendation 3: Base all water access licence limits on the sustainable yield of the water source in question.

Recommendation 4: Remove blanket and volumetric-based exemptions from requirements to obtain water access licences.

Recommendation 5: Ensure there is further public consultation on the proposed regulation.

¹³ AIP, 2.

¹⁴ Set out in section 3.3 of the AIP, at pp 16-17.

¹⁵ WMA, s 5(2)(d).

¹⁶ WMA, s 5(8).

3. Aquifer interference approvals and State significant mining and CSG activities

The AIP contemplates numerous exemptions from the requirements to obtain aquifer interference approvals for water sources that underlie Biophysical Strategic Agricultural Land.¹⁷ These exemptions are to be specified in the Aquifer Interference Regulation, under the *Water Management Act 2000*.

As a general principle, we urge that the creation of any exemption category be undertaken on the basis of independent expert scientific evidence that accounts fully for water source connectivity issues and cumulative impacts. In this section, we provide commentary specific to the proposed exemption from aquifer interference approvals of State significant mining and CSG development proposals that have been granted a gateway certificate or development consent.¹⁸

The AIP proposes to exempt from the requirement to obtain an aquifer interference approval State significant mining and CSG developments that have been granted a gateway certificate, or, where the gateway does not apply, development consent under the *Environmental Planning and Assessment Act 1979* (NSW) (**EPA Act**). For proposals involving the gateway, aquifer interference is instead to be considered at the gateway stage. For other proposals, it appears that no separate aquifer interference approval will be required.

This provision represents an alteration to the present status of aquifer interference approvals for State significant development (**SSD**) under the EPA Act. SSD is currently regulated under Division 4.1 of Part 4 of that Act. That Division replaced the former Part 3A and introduced a new regime for SSD. It exempts SSD proposals from the requirement to obtain a number of approvals. The requirement for an aquifer interference approval was, however, specifically retained, as follows:

89J Approvals etc legislation that does not apply

(1) The following authorisations are not required for State significant development that is authorised by a development consent granted after the commencement of this Division (and accordingly the provisions of any Act that prohibit an activity without such an authority do not apply):

...

(g) a water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the Water Management Act 2000.

¹⁷ See part 3.4 of the AIP.

¹⁸ AIP, 27.

The use of delegated legislation under the *Water Management Act* to effect exemptions to the specific requirement to obtain an aquifer interference approval under s 89J(1)(g) of the EPA Act for SSD is problematic because it deliberately undermines the intention of parliament to retain such approvals. As a matter of law, it is also unclear whether a regulation under the *Water Management Act* can validly effect an exemption to the assessment process for SSD under the EPA Act.

Aside from this question of legal validity, we oppose the proposed exemption because it excludes the NSW Office of Water from its appropriate sphere of responsibility in aquifer interference approvals, instead placing the responsibility for assessing aquifer impacts into the hands of the gateway panel and/or the consent authority. As the department possessing the relevant expertise in aquifer management, we submit that the NSW Office of Water should instead be the responsible body for making decisions on approvals for SSD projects. This is consistent with a more appropriate whole-of-government approach for approval of major projects.¹⁹

In relation to gateway projects, we further note that there is no detail set out in the Strategic Regional Land Use Plans (SRLUPs) on what information will be required from a project proponent for the gateway panel to consider aquifer impacts. It is therefore impossible to assess at this stage whether the gateway panel will be in a position to assess aquifer impacts to an adequate standard.

In addition, the SRLUPs provide that only aquifer impacts on Highly Productive Groundwater will be considered by the gateway panel, and only where the proposed development is to take place on Biophysical Strategic Agricultural Land.²⁰ The definition of Highly Productive Groundwater is provided in the AIP as groundwater that contains water supply works that yield at greater than 5L/sec; and that has a salinity less than 1500 mg/L.²¹ This is a narrow definition that fails to take into account that groundwater has value beyond simply its productive value for human uses, including, importantly, as a crucial component to the viability of groundwater dependent ecosystems.

The effect of this provision of the SRLUPs is that it significantly weakens the efficacy of the aquifer interference regulation provisions in the *Water Management Act*. That Act makes it an offence to carry out an aquifer interference activity without, or contrary to the provisions of, an aquifer interference approval.²² Aquifer interference activities are defined as follows:

- Penetration of an aquifer;
- Interference with water in an aquifer;
- Obstruction of the flow of water in an aquifer;
- Taking of water from an aquifer in the course of carrying out mining or certain other activities, and the disposal of that water.²³

Under the *Water Management Act*, an aquifer is defined as ‘a geological structure or formation, or an artificial landfill, that is permeated with water or is capable of being

¹⁹ See, for example, Environmental Defender’s Office NSW, *Submission to the Review of the NSW Planning System (Stage 1)*, 4 November 2011, www.edo.org.au/edonsw/site/pdf/subs/111104review_nsw_planning_stage_1.pdf.

²⁰ See p 83 of each SRLUP.

²¹ AIP, p 18.

²² *Water Management Act 2000*, s 91F.

²³ See *Water Management Act 2000*, Dictionary.

permeated with water'.²⁴ In practice, therefore, the requirement to obtain an aquifer interference approval will apply to all aquifers, regardless of the quality of water they contain. By contrast, the proposed exemption for SSD projects that are subject to the gateway, limits consideration of aquifer impacts to a narrow category of water quality – that is, Highly Productive Groundwater. The implication is that impacts on other categories of water will not be considered. This is problematic for a variety of reasons, and in particular because:

- it fails to take into account connectivity between aquifers containing different qualities of water; or between aquifers, or parts of aquifers, that do and do not underlie BSAL; and,
- it fails to appreciate the environmental and agricultural value of groundwater that is not highly productive.

Furthermore, as noted above, where SSD mining and CSG developments are exempted from the gateway process, there is no proposed substitute for the current aquifer interference approval process. In our view, this is an unsatisfactory outcome.

The requirement to obtain an aquifer interference approval should be maintained for all SSD proposals. In the case of proposals that are to be assessed by the gateway panel, the requirement that the panel consider impacts on Highly Productive Groundwater is not an adequate alternative for the assessment of aquifer interference approval applications by the Office of Water.

Recommendation 6: State significant mining and CSG developments should not be exempt from requirements to obtain aquifer interference approvals.

4. Minimum harm criteria thresholds

In this section, we provide commentary on the minimal harm criteria thresholds set out in Appendix 1 to the AIP. We note that while the AIP considers numerous significant potential negative impacts posed by aquifer interference activities, it is not always clear whether the criteria set out in Appendix 1 and the provisions within the policy, provide adequate safeguards against each of these negative impacts.

We provide the following comments on Appendix 1:

1. All thresholds, except the water quality criteria, fail to provide a link between the measure being used to assess an application for an aquifer interference policy and the risk of harm to the environment. The water quality criteria broadly relates to the potential harm that could be caused – that is, the beneficial use of the aquifer cannot change. However even this would allow changes to the water quality of the aquifer. This is a growing risk if the reinjection of water from activities such as CSG is increasingly contemplated. For other criteria, the measures used (no change in pressure, no drawdown greater than a set amount, no aquifer compaction greater than stated), do not directly relate to whether the changes will cause environmental

²⁴ *Water Management Act 2000*, Dictionary.

harm. For example, the drawdown threshold for non-highly productive groundwater below BSAL been defined as metres of pressure decline. This ignores the thickness of the aquifer and therefore the relevant potential for impacts. While there is some provision in the policy to adapt the measures on a site-by-site basis, the standard criteria should include a measure that requires no environmental harm. This could relate to assessing changes to connected streams, impact on ecosystems, and other related factors.

2. There is very little detail provided on how any impacts will be monitored or assessed. More detail should be provided and the length of time over which assessment must be undertaken, for instance whether it is over the life of the project or the life of the potential impact, should be clear.
3. More information is required on how drawdown 'relative to natural variation' is to be established. In particular, the AIP should specify how changes related to drought will be considered, and should make provision for situations where information is unavailable on what the range of natural variation is.
4. The thresholds only specify criteria for "High priority groundwater dependent ecosystems (GDEs), as specified in the relevant water sharing plan". Further consideration of impacts on GDEs is required.
5. The effects of water table *rise* and/or aquifer pressure *increase* have been given minimal consideration in setting the minimum harm criteria thresholds, and indeed in the policy more generally. In some cases, it may be that CSG activities (injection or disposal of water) may produce increases in water tables or aquifer pressures - which in some circumstances can result in adverse outcomes. For example, a water table rise can lead to water logging and soil salinity issues; while a pressure increase may result in increased levels of leakage between aquifers just as a pressure decrease would. This risk is increased by the policy decision to ban evaporation ponds and therefore should be given greater consideration.

<p><i>Recommendation 7:</i> Link minimum harm criteria thresholds to environmental impacts and risk.</p>

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