Nature Conservation Council
The voice for nature in NSW

Committee Secretary
Senate Standing Committees on Environment and Communications
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Dear Committee Secretary,

RE: Submission in to Senate Inquiry in to Water Use by the Extractive Industry

Thank you for an opportunity to make a submission on the adequacy of the regulatory framework governing water use by the extractive industry. We have organised our comments below to address each of the specific topics raised in the Terms of Reference.

Background

The Nature Conservation Council (NCC) and the environment groups we represent have been winning protections for nature in NSW for more than 60 years. We have been at the centre of many of the state's iconic conservation battles, and have notched up countless wins for nature and local communities.

Comments relevant to the terms of reference

(a) the social, economic and environmental impacts of extractive projects' take and use of water;

Extractive projects take a small share of water resources nationally compared to agricultural uses, but it is a significant share in some water sources, and likely to become more so with mining and coal seam gas activities expanding rapidly in some areas. The conflict between extractive industry's use of water resources and other users is likely to become more acute as the effects of climate change are felt in Southern Australia, with less water available for all users and for the environment.

There can be no doubt that there is already intense competition for water in the Murray-Darling Basin. Since 2004, the Commonwealth and the states have been engaged in a process to address the over-allocation of water, with the objective of protecting and restoring the water-dependent ecosystems of the Basin, including Ramsar wetlands, while maintaining agricultural productivity. A Review of Water Reform by the Wentworth Group of Scientists this year found that this process has improved the condition of rivers and wetlands compared to what they would have been if the plan had not been implemented, but that most of the target ecosystems are still in a deteriorating condition. To date,

the Murray-Darling Basin Plan has not succeeded in achieving its target of 3,200 GL of water for the environment.

In this context, any water allocated for mining in the Murray-Darling Basin must be taken from other users' share. Usually this occurs by mining companies buying water from irrigators, but this is not without a social cost. Mining companies do not provide the same social benefits as agricultural uses, since they employ less people per unit of production, and often employ fly-in-fly out workers rather than local workers. Mining companies usually buy up the high security licences, which can leave local farmers who rely on general security licences with less access to water in the dry years. Therefore, the taking up of scarce water resources should be a factor in deciding whether or not to approve of new extractive industries in the Murray Darling Basin.

Mining leaves a legacy of environmental damage which goes far beyond the direct impact of the water taken. Mines and gas wells which intersect or undermine aquifers have the potential to cause contamination and long-term hydrological change in ways which are often not well understood. Often the budget and time scale of environmental assessments are much less than is required to properly understand these highly complex processes. State regulatory authorities which approve projects with a low degree of certainty regarding long-term hydrological impacts are gambling with the long-term future of the environment and other water users, for a relatively short-term return of a few decades' worth of benefits in revenues and jobs. This is a matter which should be of concern to the Commonwealth, given the role which it has rightfully assumed in coordinating the sustainable use of water across the Basin states.

The approval of mines in arid areas of western Queensland and New South Wales poses a threat to the sustainability the Great Artesian Basin. This is the only reliable source of water for hundreds of small towns and pastoral enterprises. It also supports unique groundwater-dependent ecological communities, which can easily become extinct due to decreases in pressure caused by extraction. The Great Artesian Basin is already being extracted at a rate far in excess of its natural discharge. Yet the Carmichael Mine has recently been granted an unlimited licence by the Queensland government to take water from the Great Artesian Basin. As the Galilee Basin is developed, other mining applications are likely to follow. This should also be a significant area of concern for the Commonwealth, since the basin crosses three states and the Northern Territory.

(b) existing safeguards in place to prevent the damage, contamination or draining of Australia's aquifers and water systems;

The protection of aquifers and rivers from the environmental impacts of extractive industry is dependent upon the environmental assessment approaches of each state. In New South Wales, coal mining and gas production projects are usually assessed as state significant development, and the approval authority is either the Minister for Planning, or the Planning Assessment Commission.

While an assessment of groundwater impacts is a usual part of the assessment of any proposed coal mine or gas production project, there is no statutory minimum. Instead, it depends upon the environmental assessment requirements specified by the Minister on a project-by-project basis. As commented above, the resources devoted to assessing groundwater impacts are almost always insufficient to achieve a high degree of confidence in the potential hydrological impacts of a mine on

the environment. Projects are too often approved on the basis of further studies or adaptive management. This poses a serious threat of irreversible loss of groundwater dependent ecosystems and long-term losses to agricultural productivity.

The application of the Aquifer Interference Policy in NSW requires groundwater licences to be purchased to offset the drawdown caused by mining activity. Because this impact is predicted to occur for many hundreds of years, the licences are required to be cancelled at the end of mining operations. This effectively removes future access to groundwater for other commercial purposes and legitimises long-term impacts on groundwater dependent ecosystems, base flows and other environmental values of groundwater systems.

The cumulative impact of long-term drawdown of groundwater systems caused by mining and coal seam gas operations has not been adequately assessed.

In NSW Environmental Protection Licences (EPLs) are issued to mining operations to cover discharge of mine water into surface water sources. There is no consistency in the limits set for salinity and turbidity levels in discharge or for other pollutants such as heavy metals.

The Hunter River Salinity Trading Scheme has been established to manage cumulative impact of mine water discharge in the main stem of the Hunter River. However, large mines on the major Goulburn River tributary are not included in the Scheme. These contribute a significant salt load to the river system.

The volume of heavy metals and organic compounds associated with Permian coal seams (BTEX, Phenols, TPH) is not included in the Scheme and are not assessed for cumulative impact.

(c) any gaps in the regulatory framework which may lead to adverse social, economic or environmental outcomes, as a result of the take and use of water by extractive projects;

In addition to the matters described above in relation to production activities, a major gap in the regulatory framework in New South Wales is the under-assessment of exploration activities. Mining and petroleum exploration in most cases does not require development consent, although they are of their nature similar to production activities, and pose a similar risk of aquifer interference. This means that even very large high-impact exploration activities may be carried out with the benefit of only a very cursory environmental assessment, such as a review of environmental factors under Part 5 of the *Environmental Planning and Assessment Act 1979 (NSW).*

The cumulative impact of mining on water sources is not being regulated. This is particularly the case in the Hunter Region of NSW

In 2015 NSW DPI Water commissioned its Mid Hunter Groundwater Study which gave a broad indication of the extent of draw down in the Hunter as a result of mining operations. The area of mine pits in the study area was found to be 148 square km. A generalised buffer of 4km around all the mine pit areas was taken as the area of potential drawdown to 2m or greater giving a total

[1] http://www.water.nsw.gov.au/ data/assets/pdf f e/0009/660393/m d-hunter-groundwater-study.pdf

area experiencing this effect of 977 square km. The area of alluvial water sources overlying the >2 m drawdown impact zone was calculated at 123 square km.

Clearly, this is a significant challenge and a full assessment of the cumulative effect of past and existing mining must be undertaken before any further development consents for mining operations are issued in this part of the Hunter.

In NSW there is no assessment or monitoring of metals and organic compounds associated with Permian coal seams (BTEX, Phenols, TPH). The cumulative impact of the discharge of these pollutants into waterways is not considered in development approvals.

(d) any difference in the regulatory regime surrounding the extractive industry's water use, and that of other industries;

The regulatory regime for water use by mines coal seam gas development is generally more liberal than for other kinds of development. Under *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* consent may be granted to mines even where they are partly prohibited under a local environmental plan. By virtue of most such developments being classified as state significant, a licence for water use and water management works is not usually not required, which removes the oversight which the Department of Industry would otherwise have over these activities.

The *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* contains non-discretionary development standard designed to prevent aquifer interference. However whether aquifer interference is predicted will depend upon the rigour reliability of the assessment, and this is often where the process falls down.

There is also a Gateway process for development on strategic agricultural land which must be completed before a development application can be lodged. However, a gateway certificate cannot be refused. The Gateway Panel can only advise whether or not the proposal meets the criteria for impacts on agricultural land, including impacts on highly productive groundwater. Therefore, the Gateway process does not preclude, but only discourages, development applications for mines affecting highly productive agricultural land, which has been an area of significant community concern in recent years.

The *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011* was intended to protect Sydney's drinking water from degradation due to development. It provides that development, including mining, cannot be approved unless it will have a neutral or beneficial effect on Sydney's drinking water. Recently, litigation brought by community group 4Nature Incorporated against the Centennial Springvale mine challenged the approval of a mine expansion where expert evidence showed that it was likely to negatively affect Sydney's drinking water through the discharge of highly saline water. The challenge was upheld by the Court of Appeal. However, before final orders were made, the state government made orders retrospectively validating the approval in spite of the non-compliance. This shows how loath the New South Wales government is to stand in the way of mining development, even where it beaches existing regulations and threatens the state's most important drinking water resource.

(e) *the effectiveness of the 'water trigger' under the* Environment Protection and Biodiversity Conservation Act 1999*, and the value in expanding the 'trigger' to include other projects, such as shale and tight gas; and*

The water trigger under the *Environment Protection and Biodiversity Conservation Act 1999* provides a safeguard to ensure proper assessment of the impact of extractive industry on water resources, including aquifers.

We note that the Independent Review of the Water Trigger dated April 2017 found that "in general, Commonwealth conditions have given particular emphasis to enhancing the information and scientific knowledge base to support adaptive management of large coal mining and coal seam gas development". This shows that the 'water trigger' and the Independent Expert Advisory Committee are performing an important role in improving the standard of environmental assessment of water source impacts. It is appropriate for the Commonwealth to continue performing that role given that water security is an issue which crosses state and territory boundaries.

NCC would not support the winding back of Commonwealth involvement in the environmental assessment of water resource impacts through the approval of a bilateral assessment agreement. The New South Wales experience has been that the state government is all too willing to approve large resource developments based on insufficient science. Direct Commonwealth involvement is required to ensure that an appropriate level of scientific rigour is maintained in the face of the economic pressures to approve large coal mine and coal seam gas developments.

Shale and tight gas exploration and extraction may cause the same environmental impacts as coal seam gas development. Therefore, the 'trigger' should be expanded to include these projects.

Thank you for the opportunity to provide a submission on this important issue. Please do not hesitate to contact NCC on or should you require any further information.

Yours sincerely

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Nature Conservation Council