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**Minister for Natural Resources,
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Committee Secretary
Senate Standing Committee on Environment, Communications and the Arts
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The Queensland Government welcomes the opportunity to provide a submission to the inquiry into the potential impacts of current and projected mining operations on environmental values in the Murray-Darling Basin.

Queensland is committed to addressing the potential impacts of exploration, mining and extraction of minerals and gas to ensure that these impacts are minimised and managed so that the benefits of these activities can be maximised for the community and the economy.

The attached submission provides a summary of the current and proposed approaches by the Queensland Government in these matters.

The Queensland Government looks forward to the findings of the inquiry to identify opportunities to further address the impacts of mining in the Murray-Darling Basin and elsewhere.

Yours sincerely

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Submission by the Queensland Government
Senate Standing Committee on Environment, Communications and the Arts inquiry into impacts of mining in the Murray-Darling Basin (MDB)

Inquiry Terms of Reference:

- a. The potential impacts of current and projected mining operations on all environmental values in the MDB and, in particular, the potential impacts upon surficial and groundwater flows and quality in the alluvial flood plains at its headwaters in the Namoi Valley and the Darling Downs catchments.**
- b. Evaluation of the potential impacts in the context of the Murray-Darling Plan and agricultural productivity.**

MINING

In Queensland, the *Mineral Resources Act 1989* (the MRA) provides the legislative framework for exploration, development and mining tenure in the state. The types of mining tenements that are granted and administered under this Act include prospecting permit, exploration permit, mineral development licence, mining claim, and mining lease.

In determining the optimal utilisation of any block of land over which a mining interest is sought, the Queensland Government has established a thorough and transparent process which gives a voice to all interests including the local community, industry groups, the mining industry, and environmental groups.

As part of the application process, any mining project taking or interfering with water must seek authorisation under the *Water Act 2000* (Water Act); and any mining project must lodge an application for an environmental authority under the *Environmental Protection Act 1994* (the EPA). The environmental impacts of mining, including for example the possible effects on riparian land and water quality, are assessed and regulated by the Department of Environment and Resource Management (DERM).

Environmental impact assessments are intended to:

- Ensure that proponents assume primary responsibility for protection of any environmental values that may be affected by their proposals;
- Address environmental management for the life of the proposal;
- Contribute to statutory decisions on whether a proposal should proceed, and if so, decide what environmental management and monitoring conditions should apply; and
- Where legislation allows, incorporate community and stakeholder views in assessment and decision making processes.

If it is determined that the application complies with the relevant requirements of the MRA and the EPA, the application moves into the public notification and objection period.

At that stage, the applicant is required to publish a notice about the mining lease application and the environmental authority, advising the period for receipt of objections and where objections may be lodged. The applicant must also serve each owner of relevant land and the local authority with a copy of the notice and the application.

Any interested party may, during the objection period, lodge an objection to the grant of the mining lease, the draft environmental authority for the application and/or a condition or conditions included in the draft environmental authority for the application.

At the conclusion of the notification and objection period, the application and any objections thereto, are heard by the Land Court of Queensland, which then makes a recommendation to the Minister for Natural Resources, Mines and Energy and Minister for Trade as to whether the mining lease should be granted or rejected, in whole or in part.

Mining tenements applied for and granted under the MRA allow the holder to take action to determine the existence, quality and quantity of minerals on, in or under land or in the waters or sea above land and to extract those minerals.

An application for a mining tenement may only be accepted by the Mining Registrar pursuant to section 81 of the *Mineral Resources Regulation 2003*, over land for the application that is available land. Mining tenements can not be granted over unavailable land which includes land to which an existing mining tenement applies and the applicant is not the holder of the existing tenement or consent from the tenement holder has not been given, land within a restricted land where the mining tenement is prohibited and land that is part of a protected area.

A protected area as defined in the MRA includes areas dedicated under the *Nature Conservation Act 1992* for national and conservation parks.

A mining tenement may also be prohibited over wild river high preservation areas and nominated waterways in the wild river preservation area under the *Wild Rivers Act 2005*. Mining tenements in wild river areas may also be subject to additional conditions and provisions under the MRA.

Upon granting of a mining tenement, holders must comply with the conditions and provisions of the MRA.

Mining and Water

Coal mines require water for a number of consumptive and non-consumptive uses such as dust suppression, construction, coal washing and on-site use. The key non-consumptive use is for dewatering purposes where water is removed to permit safe production.

Water demand for coal projects in the Surat Basin (which approximates the area overlain by the Murray Darling catchment) will increase as new projects come on line. This demand may exceed or may be a very high proportion of the volume of water that could be granted under a water resources plan. In addition, dewatering of coal mines can potentially impact on access of water to existing users as well as broader impacts on the environment, and the water resource, including long-term impacts on surrounding aquifers.

Water management is one of the major objectives of the environmental conditions attached to a mining lease. The conditions generally require diversion of surface water from areas disturbed by mining to minimise the risk of contamination and to minimise the reduction of runoff that reaches water courses.

Water for coal washing, other mine processes, dust suppression and water supplies generally requires a licence under the Water Act for surface diversion or groundwater extraction.

Any discharge of contaminated water from a mine site must be authorised and generally has to meet specified standards that are generally derived from the National Water Quality Guidelines. However, discharges are relatively rare as most mines direct their waste water to tailings dams where it is decanted from the solid wastes and reused in the mine processing plants.

PETROLEUM AND GAS

The grant or administration of an authority to prospect or petroleum lease is subject to the provisions of the *Petroleum and Gas (Production and Safety) Act 2004* (the PGA) or the *Petroleum Act 1923* (the PA). All other petroleum authorities, such as pipeline licence and water monitoring authority, are granted and administered pursuant to the PGA.

Impact on Groundwater

Water resources impacted by Coal Seam Gas (CSG) operations are regulated by the PGA, the EPA, the Water Act, and the *Water Supply (Safety and Reliability) Act 2008*. The use and disposal of CSG water is a regulated waste under the EPA, for which tenure holders require an environmental authority for storage, treatment, processing or disposal. Queensland Government policy requires CSG producers to treat their CSG water unless it can be injected into suitable aquifers or used directly without treatment. This policy encourages beneficial use and minimises the ecological risks of CSG water disposal.

Production of CSG requires the extraction of large volumes of water from coal seams in order to release the gas contained within (In 2008 this amounted to about 9000 megalitres in the Surat Basin). This water has highly variable quality, but typically does not meet the National Water Quality Guidelines and because of that, the Department of Environment and Resource Management has required this water to be contained in dams so that it cannot affect surface waters.

The only exceptions have been where there has been a beneficial use of the water (such as in power stations for cooling purposes, in a coal washing plant, irrigation or to augment water supplies for a feedlot). Re-injection of the water into coal seams is occurring at one site and treatment by reverse osmosis is becoming more common with some treated water being used for irrigation. Discharge of the treated water to streams is generally not permitted because of the ephemeral nature of the streams in this area. However a temporary approval to discharge has been provided at one location in the Murray Darling catchment. Negotiations are occurring with one CSG company that wants permission to discharge up to 35 megalitres per day of treated water to the Condamine River.

As the CSG industry expands, there are concerns about the impacts that extensive dewatering of coal seams may have on groundwater reserves in the Great Artesian Basin, surficial alluvial aquifers and fractured rock aquifers. These resources are significant sources of water for towns, agriculture, mining and tourism, in addition to supporting groundwater dependent ecosystems.

Being able to adequately assess the potential impacts of the rapidly expanding CSG industry on groundwater resources requires fundamental knowledge of and data about sources and

connectivity of water in the coal seams and aquifers, as well as data on the characteristics of the coals. Much of this knowledge and data are not available because there has not been a need for it prior to the emergence of the CSG industry. As a result it is not possible for the risks to groundwater to be assessed fully in advance of development. An adaptive approach is required based on ongoing monitoring and assessment at a regional scale. For this reason it is imperative that a comprehensive regional monitoring and assessment framework be established.

Queensland Government policy requires that groundwater resources are not adversely affected by CSG production. The Queensland Government is engaged in policy and project work to determine the regime best suited for the assessment and monitoring of the impacts of CSG production on groundwater resources, including through a Coal Seam Gas Water Feasibility Study funded by the Commonwealth through the Healthy Headwaters Program.

Under the PGA, petroleum tenure holders (including CSG, conventional gas, crude oil, condensate and liquefied petroleum gas producers) are required to monitor the impacts of their activities on ground water, unless they have received an exemption from these requirements. The monitoring regime requires producers to lodge underground water impact reports predicting the impact of their activities on underground water resources, and monitor and report the impact of these activities. Where activities unduly affect bores regulated under the Water Act producers are required to “make good” the impact by restoring water supply to the bore owner or providing compensation.

The Queensland Government has commenced a work program to improve petroleum producers’ compliance with these requirements. This will involve several steps including:

- Further developing proposed trigger thresholds for make good provisions for relevant aquifers, as required by the PGA.
- Providing tenure holders with an opportunity to comment on the proposed trigger thresholds, as required by the PGA.
- Fixing trigger thresholds, as required by the PGA.
- Informing tenure holders of the trigger thresholds and their obligation to lodge underground water impact reports.
- Writing to tenure holders who are eligible to apply for an exemption from the monitoring requirements (those who were in production prior to 30 June 2005) asking them to provide a statement about their need or otherwise to prepare underground water impact reports.
- On the basis of these statements, determining whether to require those tenure holders to submit these reports, as required by the PGA.

The Queensland Government expects this process to be completed by the end of 2009 although this would be subject to the timely receipt of expert advice and the completion of the statutory consultation processes.

COAL GASIFICATION

Underground coal gasification (UCG) refers to the controlled combustion of coal (or oil shale) in the coal seam to produce a mixture of gases which are captured at the surface. The captured gas, called Syngas, can then be used as feedstock for gas-to-liquids (GTL) processing to produce oil and related by-products. In its simplest form, the UCG process

involves drilling two boreholes into a coal seam, injecting a pressurised oxidant through one hole and recovering the Syngas through the second hole. After the coal is ignited, the burn is maintained by a continuous oxidant flow. The burn creates an underground void.

Underground coal gasification has the potential to affect groundwater resources. The process can leave pollutants under the ground on completion of the burn. As a result there is potential for pollutants to be mobilised into aquifers in the long term. Also, the collapse of overlying strata can potentially damage overlying aquifers.

Concerns about the reliability of current knowledge on the technical, commercial and environmental viability of the UCG industry in Queensland, and pressure from the coal and CSG industries over competing tenures, prompted the Queensland Government to release an *Underground Coal Gasification Policy* in February 2009.

The *UCG Policy* allows the three existing pilot projects to continue or proceed. The policy disallows any further UCG pilot projects, with the exception of UCG pilot projects which have a strong ability to further demonstrate the efficacy of UCG technology. The environmental performance of the three projects will be monitored during the pilot phase of the three projects, and will be critically reviewed by a scientific expert panel. At the end of the pilot phase a Government report will, among other things, provide advice on the environmental impacts of UCG. The Government report will be prepared no earlier than December 2010 and no later than 2011.

MINING AND AGRICULTURAL PRODUCTIVITY

The Queensland Government is committed to examining the issue of land use conflict between agriculture and mining, and is currently exploring the issues surrounding land use conflict between the agricultural and resources sectors.

Development of the energy resources of the Surat Basin region of the Darling Downs will drive rapid growth in the region, which may lead to a range of impacts on agricultural uses. The Queensland Government is developing a comprehensive regional development strategy to maximise the benefits and minimise the unintended consequences of rapid growth. The Surat Basin Regional Development Strategy will inform and accelerate a region-wide planning process, which will contribute to the Queensland Government's coordinated approach to resolving land management conflicts.

Mining and agriculture have co-existed for many generations and it is the Government's intention that they carry on doing so and thriving for generations to come. Both of these industries are equally important to Queensland and the State government will continue to work closely with landholders, industry and communities to secure the long term future of mining and agriculture in Queensland. Government is also mindful of other competing demands for agricultural land including urban development and plantation forestry (both for harvest purposes and carbon sequestration).

The Queensland Government believes that this complex issue must be considered in a holistic way, and will need to complement existing measures such as *State Planning Policy 1/92: Development and the conservation of agricultural land* (SPP1/92) and issues such as the need for standards for mapping of agricultural land, regional planning processes,

community expectations and food policy issues, as well as the importance of the mining and agricultural industries as drivers of the Queensland economy.

Good quality agricultural land is a State interest of the Queensland Government as set out in SPP1/92. State planning policies are planning instruments under the *Integrated Planning Act 1997* (IPA). SPP1/92 states that good quality agricultural land is a finite national and state resource and that planning powers should be used to protect such land from those developments that lead to its alienation or diminished productivity. Mining, petroleum and gas activities are not subject to IPA and land use conflict with these activities will need to be addressed under the MRA and PGA.

In recognising that this is a critical issue, the Department of Infrastructure and Planning (DIP), in conjunction with DERM and the Department of Employment, Economic Development and Innovation (DEEDI) are working together in considering conflicts over agricultural land use within the broader policy context. Options for appropriate action will be considered by the State Government in late 2009.