

## **SUBMISSION TO ENVIRONMENT AND PUBLIC AFFAIRS COMMITTEE**

### **Inquiry into the Implications for Western Australia of Hydraulic Fracturing for Unconventional Gas**

#### **About Us**

Environmental Health Australia (EHA) is the premier environmental health professional organisation in Australia which advocates regarding environmental health issues and represents the professional interests of all environmental health practitioners. The professional organisation has been in existence since 1936 and is a member of the International Federation of Environmental Health.

Environmental Health Australia aspires to enhance the practice of environmental health to provide a healthy, safe and attractive natural, built and social environment for all the communities of Australia.

EHA (WA) represents over 250 Environmental Health Officers and Professionals in Western Australia who have a very important and crucial role in safeguarding public and environmental health standards of West Australians.

#### **Scope of this Submission**

In this submission to the inquiry into the implications for WA of hydraulic fracturing for unconventional gas, the EHA (WA) Board on behalf of its members provides comments and recommendations based towards; *minimising associated negative health impacts during exploration, operation and decommissioning stages of hydraulic fracturing for unconventional gas in Western Australia.*

#### ***Issue a) how hydraulic fracturing may impact on current and future uses of land;***

##### **Comment a)**

EHA (WA)'s position on this is that as precautionary principle dictates, unconventional gas extraction should be prohibited (or minimised) on productive arable land uses such as horticulture or broad acre agriculture where ground water aquifers exist and likely to be used for farming purposes now or in the future. These areas are considered to be essential for national and international food security and any activity which puts unacceptable risk to the viability of arable land should not be considered for unconventional gas activities. Whilst it may be argued that the risks posed by having gas wells in these areas can be managed, there is potential that the consequences of wells being compromised are not guaranteed to ensure the food security of future generations.

Impact assessments should also be made on various other land uses such as aboriginal heritage, population growth areas, other mining resources, natural conservation areas and where there is significant tourism dependency.

EHA (WA) suggests that minimum potential **impacts** that ought to be considered must include;

1. Physical - impacts on people, landscape and wildlife need to be addressed and measures for minimising risks associated with issues such as road safety and response to accidents and maintaining connection routes for communities.
2. Aquifer contamination – reduce potential impacts by understanding the hydrology of surface and ground water aquifer waters, baseline and future monitoring, management and protection for future generations is imperative.
3. Biodiversity – impacts on natural area communities and potential for fragmentation of habitat require baseline monitoring and management.
4. Preservation of existing land uses such as agriculture, pastoral lands, indigenous heritage and native reserves. Hydraulic fracturing should not diminish the current or future economic value or associated benefits received from the activities that already exist on the land.
5. Seismicity – currently there is limited data on seismological activity and associations with fracturing processes. Baseline and future fracture activity monitoring is required.

**Recommendations:**

1. ***Those proposed unconventional gas extractions occurrences and footprint of connected infrastructure are prohibited (or minimised) on productive arable land including horticultural or broad acre farmland.***
2. ***That baseline and ongoing future monitoring for physical, hydrological, biodiversity and seismological data is required and information made publically available.***

**Issue b) the regulation of chemicals used in the hydraulic fracturing process;**

**Comment b)**

EHA (WA)'s position on this is that any chemicals used in hydraulic fracturing process must be fully disclosed to a regulatory authority and be demonstrated to not have any human, animal or plant carcinogenic or other harmful effects, whether in isolation or when combined with other chemical products. This includes water used in the fracturing or extraction of gas process. The potential effects must be determined for acute and cumulative exposures and pathways whether through soil, plant, water or other means of uptake into living tissue.

**Recommendation:**

3. ***That chemicals used in hydraulic fracturing and extraction of gas processes must be fully disclosed and meet accepted levels, such that no potential future harm can be caused through exposure via various pathways to living tissues.***

**Issue c) the use of ground water in the hydraulic fracturing process and the potential for recycling of produced water;**

It is EHA (WA)'s position that any gas well that passes through strata below productive arable land is a potential pathway for contamination of the food security of the land.

Ground water used in the process should not be extracted from areas;

- where users of productive arable land rely, whether now or in the future
- should only be extracted from lowest quality water sources available

Where groundwater is used, reuse of produced water ought to be considered having regard to its quality as being deemed suitable for the activity used.

Aquifer management plans for groundwater extraction and disposal should be mandatory requirements.

**Recommendations:**

- 4. That ground water used in the hydraulic fracturing and gas extraction process is minimised (or prohibited) in areas where users of productive arable land rely, whether now or in the future. If ground water use is necessary, it be extracted from lowest quality available.***
- 5. Recycled produced water must be suitable for intended re-use.***

**Issue d) the reclamation (rehabilitation) of land that has been hydraulically fractured.**

EHA (WA)'s position is that the land that has been hydraulically fractured must be rehabilitated with local provenance plantings and managed so as the land is restored to, an enhanced natural environment to support improved biodiversity than what existed prior to fracturing.

The liability period for abandoned wells are potentially indefinite, therefore mechanisms are needed to ensure post production responsibility is managed appropriately well into the future. EHA (WA) supports an independent legacy fund being set up so future governments or other land managers can access for remediation and monitoring purposes.

**Recommendations:**

- 6. That baseline and ongoing environmental monitoring is established and maintained for the evaluation and ongoing monitoring of impacted areas.***
- 7. That hydraulically fractured land is rehabilitated to an enhanced natural environment to support improved biodiversity condition and ongoing monitoring.***
- 8. That a legacy fund be established to future guard potential costs of post-production, remediation and monitoring.***

In addition to the issues commented and recommendations stated, EHA (WA) also considers the following associated matters need addressing as a part of the scope of this inquiry;

### **Potential Impacts to Communities and operations of Local Governments**

EHA (WA) considers that the broader social and operational impacts to communities need be addressed in this inquiry.

### **Community Social Impacts**

Local Governments have a direct interest in impacts to community they serve. Social influences may include, but not limited to;

1. Migrant work force issues – loss of specialised workforce to rapid growth of the unconventional gas industry.
2. Costs of living – price increase on housing and good and services associated with proximity of gas industry activities.
3. Issues such as diesel fumes and noise from running pumps and engines 24/7 and flaring and venting may impact on local communities.
4. Loss of visual amenity and measures to offset or mitigate adverse amenity impacts.

### **Local Government Operational Impacts;**

1. The physical installation of gas distribution pipelines on local government land should integrate with existing infrastructure corridors where practical.
2. Emergency management responsibilities and capability of operators to detect and repair potential leaks from production and distribution will have some impact on local government.
3. Increased frequency and costs associated with maintenance of connected infrastructure, particularly roads caused by increased heavy distribution traffic already impacted by minerals and grain transport users.
4. Access for local governments to combatting and flood emergency where physical and controlled access is restrictive.
5. Potential introduction and spread of plant and animal pests and diseases from traffic through natural areas requires careful management.
6. Protection of local biodiversity of natural areas and landscape characteristics will be important for the minimisation of habitat fragmentation and potential negative impact on landscape function in the local government areas.

EHA (WA) considers a 'social licence' approach is required where potential impacts affect communities and local government operations.

### **Recommendations;**

- 9. That baseline assessments and ongoing monitoring of environmental and public health risks is conducted at both local and regional levels, where hydraulic fracturing is proposed.**
- 10. That a social impact management plan be prepared and adopted through effective consultation, dialogue and engagement with affected communities.**