



Department of  
**Environment and Science**

Our Ref: CTS 19174/20

29 September 2020

Ms Leanne Brummell

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Dear Ms Brummell

Thank you for your emails dated 31 August 2020 and 2 September 2020 regarding Armour Energy's resource activities near the Surat township.

On 28 February 2020, the Department of Environment and Science (the department) approved an application to amend environmental authority (EA) EPPG00694213 by Armour Energy (Surat Basin) Pty Limited (Armour) for the Kincora Project. The amendment application sought approval to conduct hydraulic fracturing (stimulation) activities on all petroleum wells authorised by the EA resulting in the approval to stimulate up to 238 wells.

You have raised a number of concerns regarding the potential for environmental impacts, specifically impacts from the migration of gas and brine to surface water, due to Armour's planned stimulation activities. We appreciate the time and effort you have taken to articulate these concerns and bring them to our attention. The department takes its responsibility in regulating resource activities very seriously. All applications under the *Environmental Protection Act 1994* (EP Act) undergo a rigorous assessment process in accordance with the legislative requirements.

Armour's application was assessed to determine if the stimulation activities could be managed in a manner to prevent environmental harm. As part of this assessment process the department considered the impact of the proposal on the receiving environment including on both surface and groundwater environmental values. In making its decision the department considered information provided in Armour's application, including fracture modelling, which identified safety factors to ensure the vertical fracture propagation remains within the target gas formation, the depth of the target formation and that Armour will not be using groundwater for their activities.

A key consideration for Armour's planned stimulation activities is that their operations relate to conventional/tight gas. For their Kincora project area, extraction will target the formations (namely the Rewan, Bandana, Tinowon and Cattle Creek) that are at depths of more than 1,800 metres. It has been shown that these formations hold limited water which means that Armour will be sourcing water for stimulation and not using groundwater for their activities. Consequently, drawdown and groundwater contamination are unlikely and the risks to surface waters, springs and terrestrial groundwater dependent ecosystems are very low.

In making the decision to approve the EA amendment application, the department was satisfied that the mitigation measures proposed in the EA conditions were sufficient to

ensure the ongoing protection of environmental values, including restrictions on the number of wells to be stimulated and the use of stimulation fluid additives.

The approved EA includes a number of conditions for stimulation activities. Prior to undertaking stimulation activities, the operator must:

- carry out an environmental risk assessment for every well proposed to be stimulated;
- conduct water quality baseline monitoring and ensure sufficient water quality data to accurately represent the water quality in the well to be stimulated; and
- develop a stimulation impact-monitoring program that must be complied with during stimulation, as regulated by the department.

The risk assessment and monitoring program ensure that all the relevant matters for each well are considered prior to stimulation activities taking place, and that any identified risks will be mitigated or managed to prevent environmental harm occurring. It should be noted that although an operator may be approved to stimulate at multiple well locations, the operator may not need to carry out stimulation at every well due to the results of site-specific assessments, varying geology of reservoirs and available resources.

In addition, as Armour are not dewatering the coal formation in order to release the gas for production, the activities will not be causing an increase in gas pressure. Where the target reservoirs are much deeper underground, there are fewer coal exploration boreholes drilled to investigate coal mining opportunities. Therefore, it is expected that the Kincora project and surrounding areas have a very low risk of being impacted by incidents of saline groundwater releases from coal exploration boreholes.

Thank you again for raising these issues with the department, the department will, as part of its compliance activities, including in relation to the specific well that you have identified, ensure that Armour are in compliance with its EA. The department also undertakes regular compliance activities which assess an operator's environmental performance and ability to comply with the conditions of its EA, including review of stimulation risk assessments. The department has also recently released its Annual Strategic Compliance Priorities 2020-21, which includes a focus on CSG activities management and treatment of CSG water and hydraulic stimulation. The priorities can be found here - [https://environment.des.qld.gov.au/\\_\\_data/assets/pdf\\_file/0009/210042/annual-strategic-compliance-priorities-2020-2021.pdf](https://environment.des.qld.gov.au/__data/assets/pdf_file/0009/210042/annual-strategic-compliance-priorities-2020-2021.pdf).

Should you require any further information, you may contact Mr Rob Spalding, Team Leader, Southwest Compliance, of the Department of Environment and Science on telephone (07) 4529 8349 or by email at [rob.spalding@des.qld.gov.au](mailto:rob.spalding@des.qld.gov.au).

Yours sincerely

