

## GISERA Reports Released

Emailed to CCC Members  
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The CSIRO Gas Industry Social and Environmental Research Alliance (GISERA) have released a number of reports recently in relation to research work that is being undertaken in NSW. Reports are available on the GISERA website at <https://gisera.org.au/> and the links to individual reports are as below.

A **Summary Brochure** has been developed to provide an update on the nine NSW-based GISERA projects currently underway.

Available from: <https://gisera.org.au/factsheet/new-south-wales-coal-seam-gas-research-projects-update-summary/>

“The brochure includes information about several projects, including:

- a project aimed at identifying and quantifying methane emissions in the Pilliga region, NSW
- a water project providing some interim modelling results which assess potential changes in Great Artesian Basin aquifer flow volumes due to coal resource development in the Pilliga
- Social baseline studies on community wellbeing in the Narrabri region”

### **Community wellbeing and perceptions of coal seam gas (CSG) development in the Narrabri region, NSW**

Available from: <https://gisera.org.au/news/nsw-research-measures-community-wellbeing/>

“The report involved surveying 400 Narrabri Shire residents during March and April this year to establish baseline measures of community wellbeing and expected future wellbeing over the next three years. It also investigated community resilience and adaptation in the context of a proposed CSG development in the shire, as well as measuring local attitudes and perceptions of CSG development and the CSG sector”.

### **Impacts of CSG depressurisation on the Great Artesian Basin (GAB) flux**

Available from: <https://gisera.org.au/project/impacts-of-csg-depressurisation-on-the-great-artesian-basin-gab-flux/>

“This report, *Uncertainty analysis of CSG-induced GAB flux and water balance changes in the Narrabri Gas Project area*, quantifies potential groundwater flux and water balance changes in the Great Artesian Basin (GAB) aquifer (Pilliga Sandstone) under CSG development scenarios in the Gunedah Basin, NSW. It provides an independent probabilistic estimation of potential regional scale coal seam gas (CSG)-induced impacts on the groundwater resource in this GAB aquifer arising from generic depressurisation of Gunedah Basin coal seams.

- This interim report demonstrates that CSG development will result in some changes to the groundwater flow and water balance of the Pilliga Sandstone aquifer in this recharge area of the GAB.
- Based on 500 simulations constrained with observations, preliminary results of the groundwater modelling showed an expected maximum water loss from this GAB aquifer due to CSG development of around 85 megalitres per year, equivalent to about 0.3% of the Long Term Annual Average Extraction Limit from this aquifer.

- Water for CSG development is not taken from the GAB aquifer, but from the coal seams which are part of the Gunnedah Basin that underlie this GAB formation resulting in a reduction in pressure in the coal seams.
- The expected value of induced change in flow from the near-surface aquifer, called the Namoi Alluvium, into the Pilliga Sandstone was estimated at 0.89 megalitres a year or nearly 0.001 % of the average annual extractions from the alluvium. The groundwater of the Namoi Alluvium is a major agricultural resource for the region.
- This modelling study has provided an independent estimate of the range in potential maximum impacts on water volumes of the Pilliga Sandstone GAB aquifer under a broad range of scenarios.
- Ongoing studies aim to improve the understanding of recharge and aquifer connectivity and refine the model predictions of water impacts to water resources in the Namoi region. A final report from this research is due in mid-2018”.

### **Regional Methane Emissions in NSW CSG Basins**

Available from: <https://gisera.org.au/project/regional-methane-emissions-in-nsw-csg-basins/>

“This is the final report for the GISERA project ‘Regional methane emissions in NSW CSG basins’. This report combined current and previous mobile survey in the Pilliga forest and Narrabri region to quantify the current background levels of methane in the study area. The result of this study indicates that the ambient methane concentrations are mostly similar to background concentrations observed in undisturbed areas with no sources of anthropogenic methane. It is now considered reasonably likely that most of the large point source methane emitters in the region have already been identified. However, the distribution and magnitude of other more widely diffuse sources such as agriculture, boreholes and natural seeps are less well understood”.