

From: [REDACTED]
Sent: Monday, 9 June 2025 4:01 PM
To: Regional Planning Interests Act
Subject: RPI25/004 Arrow CASS tie-in
Attachments: Arrow Gas and Water Production Jan-June 2023 Comparison.xlsx; OGIA predicted subsidence as at 2055 with flood flow marked in blue.png; Petroleum data submission- Production - Arrow Energy 2023(H1 2023).xlsx

RPIAct@dsdilgp.qld.gov.au

Submission in relation to application – RPI25/004 Arrow CASS tie-in

LOCATION -Daandine Nandi Road, Ranges Bridge, Qld 4405. Approximately 25 km west of Dalby, Qld. (PAA Priority Agricultural Area) (SCA Strategic Cropping Area).

Important Note: Please see the three attachments - which demonstrate water and gas extraction figures only for a six month period for high producing wells (thumpers):

1. Arrow Gas and Water Production Jan-June 2023 Comparison
2. OGIA predicted subsidence as at 2055 with flood flow marked in blue
3. Petroleum data submission - Production - Arrow Energy 2023 (H1 2023)

INTRODUCTION

This submission will broadly discuss the anomalies and misperceptions that have arisen from the Surat Gas Project, including its long-term impact on the Condamine Alluvium. This includes the Condamine Alluvium Substitution Scheme (CASS) which returns treated water to landholders for irrigation use, instead continuing to take from the Alluvium!

This submission will rely to a great extent on information provided by the directly impacted landholder, who is experienced and knowledgeable on the issues that have been raised by the subject RIDA application. Therefore this submission will not contain technical data. I leave that to those who are directly impacted and qualified on the subject of subsidence etc.

The issues raised in this Surat Gas Project RIDA application have long-term consequences for all landholders across the Condamine Alluvium/Floodplain and need careful and comprehensive examination by the Queensland Government; in particular the Department of Agriculture and the Department of Water.

The issues raised have serious implications for securing the future of a healthy underground water supply, supporting and continuing a strong and viable agricultural industry across the Condamine Alluvium and the Darling Downs.

This region is the principal pillar of Queensland's economy and its future is now threatened by the coal seam gas industry!

The gas industry is taking place across an extremely flat Condamine Floodplain and consists of PAA intensive agricultural land of gradients ranging from in some areas 0 to 0.03%. That equates to the natural fall in the land being less than 300mm over 1 kilometre. It defies belief that the Surat Gas Project was even given approval knowing the existent facts of groundwater extraction/loss and

resultant impacts of subsidence on sensitive Priority Agriculture Areas (PAA's), to be given priority over resource activity. These facts are strongly supported by the Regional Planning Interests Act 2014 (RPI Act) and RPI Statutory Guidelines and have been quoted ad nauseam in various submissions during the last few years.

I quote an Overview of the intent of the RPI Act: "The Regional Planning Interests (RPI) Act and associated regulations in Queensland aim to protect areas of regional interest, such as PAA's and Priority Agricultural Land Uses (PALUs), from potentially harmful activities. The Act restricts resource and regulated activities in these areas unless a regional interests development approval (RIDA) is granted or the activity is exempt".

We all know that Arrow is not exempt from doing and carrying out RIDA's on all PAA's; no exemptions exist for them. This is a falsehood and not supported by legal interpretation! Drilling deviated wells near and under the Condamine River/Aquifer and within known Fault zones may well compromise the survival of regional communities that have relied on agriculture for survival. Aquifer depletion is a reality, for example, the Walloon Coal Seam Aquifer system. No precautionary principle has been applied as stated in the RPI Act Statutory Guideline 02/14 on Page 4 under the heading of "What constitutes a significant impact?". Much work is yet to be done in relation to declining levels in both aquifers above and below the Walloon Coal Seams.

CONSULTATION

In general consultation/engagement has been deficient across the Surat Gas Project, particularly for those landowners who have not signed CCA's. It does not meet the intent of COEXISTENCE which means cooperation between 2 parties working in tandem to provide, in this case, an economic benefit. Causing harmful impacts such as depleted aquifers and subsidence to adjoining neighbour/s is definitely not coexistence and violates the rule of law, our politicians are elected to uphold! Please refer to the directly impacted landholder submission for further detail on consultation.

OVERLAND WATER FLOW AND ASSOCIATED RISKS CAUSED BY SUBSIDENCE

I have brought to the attention of the Queensland Government many times (as recently as of 2 June 2025 to the Deputy Premier and Department of State Development, Infrastructure and Planning), no overland flow studies have yet been carried out across the Condamine Alluvium/Floodplain, a critical source of water for both dryland and irrigators.

I can only conclude this is a deliberate omission by the Queensland Government to ignore the "Final Report; Potential consequences of CSG-induced subsidence for farming operations on the Condamine alluvial floodplain". July 2023.

See link address: <https://acrobat.adobe.com/id/urn:aaid:sc:AP:5c101201-2757-4d6d-ae2b-7d09b8f0523b>

This report was very clear about the consequences for landowners across the Condamine Alluvium/Floodplain if evidential data is ignored and further studies not carried out. See below (highlighted), quote from this Final Report:

"The "Potential consequences of CSG-induced subsidence for farming operations on the Condamine alluvial floodplain" report, released by the GasFields Commission Queensland (GFCQ) in July 2023, details potential consequences of Coal Seam Gas (CSG) induced subsidence on farming operations. This report, a follow-up to a review of CSG-induced subsidence, also includes five additional recommendations for the government.

The GFCQ is an independent statutory body in Queensland responsible for managing the sustainable coexistence of landholders, regional communities, and the onshore gas industry.

Key findings and recommendations of the report:

Impact of CSG-induced subsidence:

The report acknowledges concerns about the impact of CSG-induced subsidence on agriculture, particularly in the Condamine alluvial floodplain.

Need for clearer understanding:

The report emphasizes the importance of understanding the consequences and extent of CSG-induced subsidence at a farm scale.

Recommendations:

The report includes recommendations for the government to ensure appropriate protections for landholders affected by subsidence and to establish a clear process for addressing regulatory obligations.

Stakeholder consultation:

The GFCQ conducted consultation workshops with landholders and community members to gather feedback and incorporate it into the report.

Focus on sustainable coexistence:

The GFCQ aims to facilitate the sustainable coexistence of the gas industry, landholders, and communities".

And on Page 17 from the same Final Report and I quote:

"For dryland cultivation fields, a farm assessment should include predicted change to drainage maps, any change in the location of the points of drainage discharge and any predicted increase in the area of pondage. Also farm assessments should be carried out having regard to predicted changes in overland flow of water".

A change of Government does not absolve the current government from honouring commitments from the previous government, especially when applied to public policy/legislation.

Any impacts on overland flow across the Condamine Floodplain is devastating for all farmers whether dryland or irrigators!

PLEASE TAKE NOTE: DAF and Minister Ann Leahy, Department of Local Government, Water, should have input into this overland water flow issue.

Both Federal EA and State EA prohibits the change of direction of water flow.

"The Australian Government Department of Climate Change, Energy, the Environment and Water's Matters of National Environmental Significance Significant Impact Guidelines 1.1 provides guidance on what may constitute a 'significant impact' on a matter of national environmental significance under the Environment Protection and Biodiversity Conservation Act 1999. This guidance has been used to assist with understanding the exemption under Section 22 of the RPI Act.

To determine whether an activity is likely to have a significant impact, consideration needs to be given to the probability of the negative effects of the impact occurring. For example, to be 'likely', it is not necessary for a significant impact to have a greater than 50 percent chance of happening; it is sufficient if a significant impact on the area of regional interest is a real and not a remote chance or possibility.

If there is scientific uncertainty about the impacts of an activity and potential impacts are serious or irreversible, the precautionary principle is applicable. Accordingly, a lack of scientific certainty about the potential impacts of an activity will not itself justify that the activity is not likely to have a significant

impact on the area of regional interest.

One example of where an activity may be considered not likely to have a significant impact on a PAA may be where the activity will not:

- result in a decrease in the particular agricultural product supplied from the PAA or region
- result in a decrease in the PAA or region's ability to undertake a particular PALU in the future.

The impact of lost water able to be pumped certainly results in a decrease in agricultural product supplied from the PAA".

It is now obvious that broader drainage issues now related to CSG induced subsidence would impede regional drainage, so must be addressed prior to any further activity across the Condamine Floodplain by Arrow Energy.

NOTE!!

Once again Arrow is drilling wells in both Kupuun and Springvale without an approved RIDA,, having withdrawn the Springvale RIDA. These actions by Arrow signify unlawful activity which currently appear to be ignored by the Queensland Government.

The Queensland Government must call a halt to all CSG activity until an Overland Flow Study is carried out across all farming properties across the Floodplain!

RESTORATION PLAN

It would now appear that any change across the Condamine Floodplain in regards to overland flow and its subsequent impacts of subsidence across the region as a whole, is a serious reflection on the failures of the Surat Gas Project and the use of Adaptive management as an approval tool to solve problems as they arise. For example, it is obvious that the impacts of drawdown on underground water aquifers and subsidence will be irreversible (according to Coffey, Arrow's own consultants and the Final Report on CSG-induced subsidence (already quoted earlier in this submission).

These admissions are alarming and urgently need the attention of the Queensland Government as a whole. Unless these issues are dealt with in a timely robust fashion, the destruction of agriculture and loss of precious underground water will become a reality across the Condamine Floodplain.

The whole of the CSG impacts across the Condamine Alluvium, should be addressed in this RIDA as there is no way that even the area around the Tie-in valve can be restored to its pre resource activity level as it has already fallen significantly; the land would have to be levelled to get to pre activity level in order to have the original drainage of the region returned. The OGIA LiDAR tool available online clearly shows the above area in the vicinity of the tie-in valve to have already subsided 0.4m (400mm). This is twice that predicted by the OGIA model and has occurred over some 3 years and not the 30 years predicted by the model.

The OGIA model and data has been developed as an indicator of CSG induced subsidence on a regional basis and is not accurate for individual property or field analysis or predictions.

NOTE: It is pointed out that subsidence is irreversible as previously indicated in this submission!

The RPI Act Statutory Guideline 09/14 - How to determine if an activity has a permanent impact on Strategic Cropping Land (SCL being the subject land of the RIDA Application) states the following (highlighted):

An activity has a permanent impact on SCL, if, because of the carrying out of the activity, the land cannot be restored to its pre-activity condition.

Key concepts and terms

Pre-activity condition

Pre-activity condition is the condition of the land's soil as identified and analysed within one year before the making of an assessment application for a resource activity or regulated activity to be carried out on the land.

Restoration

For land to be restored to pre-activity condition, it will require an adequate restoration to the former or original condition of the land, including the productive capacity of the land. It does not simply mean 'revegetated', 'rehabilitated' or 'reclaimed' which are all commonly used terms under other state government permit and approval processes.

Restoring the land means that the land is not only returned to its pre-activity use but that it is also returned to its pre-activity productive capacity or potential productive capacity.

Productive capacity

In the context of SCL, the productive capacity refers to the intrinsic capability of the land and soil to store and supply the water and nutrients required to sustain crops in the future.

Addressing the SCA criteria

To demonstrate that the proposed activity does not have a permanent impact on the impacted SCL, it will be necessary to demonstrate that:

- a) the land is able (without constraints) to be restored to its pre-activity condition following the undertaking of the proposed activity and
- b) the impacted SCL has been restored to its pre-activity condition following the cessation of that activity.

The actual nature and magnitude of impacts, and the significance of the risks to productive capacity, will be activity and site specific. To restore land to its pre-activity condition it is essential that the land's condition is well understood so that it is possible to:

- a) accurately identify and characterise the activity and site-specific impacts that might flow from the undertaking of a specific activity at a particular site
- b) properly evaluate the significance and management implications of those impacts RPI Act Statutory Guideline 09/14 4
- c) develop an activity and site-specific management plan that manages and mitigates those impacts during the developmental, operational and decommissioning stages of the activity, and so ensure the land is finally restored to its pre-activity condition
- d) establish restoration criteria against which successful restoration can be demonstrated and signed off.

Understanding the condition of land

Notwithstanding the potential for assessing any activity and site-specific attributes, the basic components of any assessment of pre-activity condition are likely to include the following:

- terrain, landform and slope
- site lithology
- current land use
- previous site disturbance and modification
- site and soil hydrology
- soil surface condition
- vegetation and groundcover, including crops
- microrelief
- soil depth (including depths >1 metre) and
- soil profile descriptions, incl. for each horizon or layer.

Assessment of condition

The general principles and land resource and soil survey methodologies outlined in the RPI Act Guideline 08/14 should provide the basis for much of the initial fieldwork and laboratory analyses required to establish the pre-activity condition of land.

Where this is not sufficient detail on the attributes of the land that will be impacted, publications such as the Guidelines for Surveying Soil and Land Resources (McKenzie et al., 2008), Soil Physical Measurement and Interpretation for Land Evaluation (McKenzie et al., 2002) and Soil Chemical Methods – Australasia (Rayment & Lyons, 2011) will provide appropriate guidance as to suitable survey, data collection and analytical techniques for attributes not normally assessed when considering compliance with the SCL criteria for land provided in Schedule 3 of the RPI Regulation.

All assessment techniques and methodologies used should be well established or supported by references to credible scientific publications.

It's now clear there is indisputable evidence, based on production well figures from the Kupunn district, there are wells where the more water and gas being extracted from these wells, the more surface subsidence is occurring!

Meaning subsidence is relative to depressurisation of the coal seam.

Therefore any model using regional averages is NEVER going to show the real subsidence occurring from wells that are now extracting HUGE amounts of both water and gas.

In other words there is a clear connection between loss of underground water, subsidence as irreversible, and the ability to restore the impacted land to its pre-activity condition. It is a degree of risk over the whole Condamine Alluvium (the region); a risk that landowners should not be asked to

suffer on PAA's, otherwise the future of agriculture will be bleak and farm valuations will ultimately be impacted.

In support of the above, OGIA has produced a model of the predicted CSG induced subsidence likely to occur over a hundred-year period. A timeline has revealed the level of subsidence by the year 2055.

NOTE:

Please refer to detailed evidential data provided by [REDACTED] .

CASS PIPELINE AND BUN DECEPTION

The subject of this RIDA is ultimately about distributing the BUN water to just a few landholders.

One would have to question the actual cost benefit of providing BUN water for a limited time period; in other words for as long as the BUN water is available. Those farmers would then resort to once again pumping for example, from the Condamine Alluvium. So any cumulative benefit to the Alluvium will be lost.

In other words the BUN Scheme (CASS) was built on a false narrative designed to provide a short term benefit to those farmers who received the treated water. The loss of water from the impacted aquifers is arguably unable to be quantified through replenishment which remains a big unknown, especially in a drying climate. Figures that have been quoted are upwards of 50 years to centuries depending on recharge. Also subsidence is projected to continue well beyond the life of the Surat Gas Project!

The Surat Gas Project was predicated in part on "selling" the idea of CASS and I quote from the March 2025 - Arrow Energy RIDA Application: Executive Summary:

"As part of the Surat Gas Project (SGP), Arrow Energy (Applicant) is mitigating its impact on the Condamine Alluvium through its Condamine Alluvium Substitution Scheme (CASS). The scheme is designed to mitigate the low level of interconnectivity between the Condamine Alluvium and the Walloon Coal Seams by returning treated water to landholders in the area of expected impact, for agricultural irrigation use.

Rather than use an agreed amount of their water allocation, participants in the scheme will use Arrow's treated water. The volume of water returned will be based on the total volume of water predicted to be extracted through coal seam gas production, with Arrow providing substitution year-round through a 'multiplier' calculation to ensure that participants are no worse off through scheme participation, meaning farmers will be delivered more water than their existing licences.

The additional water provided to participating landholders could result in production yield on these farms increasing and the impact on the Alluvium from water take, will be lessened given the reduction of the revoked allocations. The water to be provided will be treated to a standard to a higher specification than is required under the Australian and New Zealand Environment and Conservation".

CONCLUSION

- There is a clear correlation between loss of underground water, subsidence as irreversible, and the inability to restore the impacted land to its pre-activity condition. As oft quoted in many submissions, Arrow's own consultants established that subsidence is irreversible and the GFCQ Report of "Potential consequences of CSG-induced subsidence for farming operations on the Condamine alluvial floodplain" - July 2023 also established that subsidence is irreversible.
- A regional approach using averages across the Condamine Floodplain will not present a true picture of what is happening to individual farms across the Alluvium. An individual farm approach across the whole region needs to be taken to subsidence and its associated impacts on soils and storage of underground water due to extraction; meaning that a regional approach to restoration is required, to accurately reflect the pre-activity condition of the PALU land prior to any resource activity.
- What has happened to various properties in Kupuun is well supported by various spreadsheets, Figures and OGIA LiDAR data which have been included as part of this RIDA submission process by impacted landholders. If these events are replicated across the Condamine Alluvium, for example, in Springvale/Grassdale, it would arguably be seen as a deliberate act of harm by the Queensland Government.
- The OGIA LiDAR tool available online clearly shows the above area in the vicinity of the tie-in valve to have already subsided 0.4m (400mm). This is twice that predicted by the OGIA model and has occurred over some 3 years and not the 30 years predicted by the model.
- The OGIA model and data has been developed as an indicator of CSG induced subsidence on a regional basis and is not accurate for individual property or field analysis or predictions.
- Arrow claims "CASS is designed to offset the impact of Arrow's natural gas-related activities on the Condamine Alluvium's groundwater resources". **This very statement is an admission that gas-related activities do impact the CA.**
- Department of Local Government, Water and Volunteers (DLGWV) must have input in relation to additional Requirement Notice for this RIDA. (DLGWV) has a Strategic Plan 2024-2025.
- This Strategic Plan clearly outlines 'Improved regulatory outcomes to ensure fair, sustainable and equitable use of water.
- The Plan states it is to 'Maximise water supply planning for future sustainability and security for the next generation
- Broader drainage issues now related to CSG induced subsidence that would impede regional drainage must also be addressed.
- CSG induced subsidence across our flat floodplain has now been recorded as 2-3 times that listed in the UWIR 2021. This has occurred in the first 30 months of a 7-8 year period of most rapid water drawdown.
- CSG subsidence impact has the real possibility of changing the overland flood path direction.
- Once Walloon Coal Seam Water has been extracted, it is not possible to reinject or replace this dewatered aquifer.
- Solution is to stop pumping any further Walloon Coal Seam water.
- The Department of Water (DLGWV) needs to be involved in this application due to the impact of depleting the Walloon Coal Seam Aquifer – a part of the Murray Darling Basin and the Great Artesian Basin.
- DLGWV are responsible for ensuring flood water flow path is not altered.
- Australia is one of the driest continents on earth, including a drying climate.

Based on the above points this RIDA application RPI25/004 Arrow CASS Tie-in should be refused.

[REDACTED]

Part of the withdrawn Springvale RIDA RPI 22/004 Application

Subsidence (p50)

