Decommissioning CSG wells

Stakeholder perspectives

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Outline

● Motivations for the research
● What do we mean by well decommissioning?
● Project overview (including GISERA approach)
● Regulatory environment, here and abroad
● Workshops – key messages
● Options going ahead
Why study well decommissioning?

- Legacy commonly raised by the community
- Examples from other industries and other jurisdictions
- Coal Seam Gas development
  - Many 1000's of wells, co-located with other land users
  - CSG well’s decommissioned all the time (exploration wells, poorly performing wells, well integrity issues, water bores)
- Planning for the end from the beginning
What is well decommissioning

- Planned shut-down and removal from service of infrastructure, including rehabilitation of the site
  - Abandonment of the well
  - Rehabilitation of the surface (including progressive rehabilitation)
Project Overview

- “What does successful well decommissioning mean?”

What are the regulatory requirements?
- Queensland
- New South Wales
- North America

Three workshops, each involving
- Industry
- Regulator
- Local stakeholders (landholders, local council)
Regulatory framework – Qld and NSW

- Broadly similar, with some procedural variation
- Licencing, environmental and decommissioning conditions/requirements
  - QLD environmental conditions in an Environmental Authority
  - NSW environmental conditions part of development consent
  - In both jurisdiction these conditions based on an environmental assessment
- Both jurisdictions
  - have a code of practice for well construction and abandonment
  - have financial assurance that scales with the size of development and allows for progressive rehabilitation
  - place significant weight on the landholder’s views
Regulatory framework – Qld and NSW

● Codes of practice
  - NSW code requires cementing of entire vertical section
  - QLD code requires isolation of permeable/hydrocarbon bearing zones

● Approval
  - NSW requires approval before abandonment, QLD does not
  - QLD requires notification after abandonment
Regulatory framework – International

- Reviewed regulatory frameworks in
  - Alabama, Colorado, New Mexico, and Wyoming, USA
  - Alberta, Canada
- All US jurisdictions require approval prior to abandonment
- Alabama only requires prior approval for ‘non-routine abandonment operations’ (prior notification still required)
- Jurisdictions have a mix of prescriptive and objective based abandonment requirements
- All jurisdictions have financial assurance, also orphaned well funds
Workshops

● Three workshops
  - Camden, Macarthur Region, New South Wales – Production winding down
  - Chinchilla, Queensland – Production at high levels
  - Narrabri, New South Wales – Proposed development
  - Participants from industry, regulator and local stakeholders (landholders, local council).
Workshop topics

- Workshop questions
  - How is industry responding to best practices?
  - How are regulators responding?
  - What are the expectations of local stakeholders?
  - To what extent do the views of all stakeholders align?
Workshop outcomes

Alignment

● Broad consensus that the outcome of successful well decommissioning is that there should be no legacy issues arising from the abandoned well or well pad, in perpetuity

Misalignment

● Industry and regulator have a high degree of confidence that this can be achieved
● Broader community less confident
Codes of practice

- Industry and regulator have a high degree of confidence in the code of practice in each state, and rely on it strongly
- The broader community does not share this confidence
  - Technical nature of the codes of practice
  - Evidence that the codes of practice are being followed
  - How would you know if you haven’t been back to check?
But concrete cracks!

- My cement is not your concrete
Increasing confidence

● Oversight and independent assessment
  - Proactive checking of abandonment by independent assessors
  - Appropriate penalties for failure to comply

● Long term monitoring
  - Broader community want to see long term monitoring

● Transparency and access to information
  - Completion and abandonment reports too hard to understand, too hard to find
Long term legacy

- Clarity needed over what responsibility returns to the state
- Local stakeholders asked who would pay for future problems
- Local stakeholders desire a mechanism to report problems
- What happens to orphaned wells?
Options to consider are

- More accessible information from government and industry on the well abandonment regulation and processes to improve broader public understanding
  - factsheets on regulation, engineering process and legacy
  - plain language summaries of well completion and decommissioning reports
- Better process for handling public enquiries
- A program of monitoring abandoned wells by government and industry, with publicly-available results
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What does monitoring involve?

● There is evidence that abandonment of oil and gas wells is not always successful (Kang et al. 2014; Kang et al. 2016; King and Valencia 2014; Boothroyd et al. 2016; Townsend-Small et al. 2016), however the well abandonment methods are rarely discussed

● Gas migration main issue

● Is a program of long term monitoring of abandoned CSG wells in Australia warranted?
  - What would that monitoring look like?
  - What are the risks (CSG reservoirs depressurised, hydrostatic pressures, interaction with aquifers)?