



Australia's National  
Science Agency

**GISERA** | Gas Industry Social and Environmental Research Alliance

# Progress report

Sources and mobility of gas in formations below the Walloon  
Coal Measures



# Progress against project milestones

Progress against milestones/tasks are approved by the GISERA Director, acting with authority in accordance with the [GISERA Alliance Agreement](#).

Progress against project milestones/tasks is indicated by two methods: [Traffic light reports](#) and descriptive [Project schedule reports](#).

1. Traffic light reports in the Project Schedule Table below show progress using a simple colour code:

- **Green:**

- Milestone fully met according to schedule.
- Project is expected to continue to deliver according to plan.
- Milestone payment is approved.

- **Amber:**

- Milestone largely met according to schedule.
- Project has experienced delays or difficulties that will be overcome by next milestone, enabling project to return to delivery according to plan by next milestone.
- Milestone payment is withheld.
- Milestone payment withheld for second of two successive amber lights; project review initiated and undertaken by GISERA Director.

- **Red:**

- Milestone not met according to schedule.
- Problems in meeting milestone are likely to impact subsequent project delivery, such that revisions to project timing, scope or budget must be considered.
- Milestone payment is withheld.
- Project review initiated by GISERA Director.

2. Progress Schedule Reports outline task objectives and outputs and describe, in the 'progress report' section, the means and extent to which progress towards tasks has been made.

## Project schedule table

TASK NUMBER	TASK DESCRIPTION	SCHEDULED START	SCHEDULED FINISH	COMMENT
1	Project management, stakeholder engagement including with OGIA, UQ and CSG operating companies as well as communication management	Duration of project		
2	Collection of well data, gas geochemistry data and collation	1 Jul 2024	30 Nov 2024	Complete
3	Hydrochemistry data collection and collation	1 Jul 2024	30 Nov 2024	Complete
4	Conceptual modelling	1 Sept 2024	30 Apr 2025	
5	Building the geological model	1 Jan 2025	31 Jul 2025	
6	Petroleum Systems modelling	1 Jul 2025	31 Jan 2026	
7	Numerical modelling	1 Dec 2024	31 Jan 2026	
8	Final report compilation	1 Feb 2026	30 Jun 2026	
9	Communicate findings to stakeholders	1 Jul 2024	30 Jun 2026	

## Project schedule report

### TASK 1: Project management, stakeholder engagement including with OGIA, UQ and CSG operating companies as well as communication management

#### BACKGROUND

This project will require engagement with industry, OGIA and the Centre for Natural Gas Research at UQ. These institutions have previously conducted hydrogeological and geochemical studies in the Surat Basin region that will provide important background information required to conduct the proposed modelling study. This task also includes time for the project leaders to manage the project and undertake administrative actions associated with project progress.

#### TASK OBJECTIVES

Engage with OGIA, UQ, industry, government agencies and Technical Reference Group representatives to obtain information for the project, manage project staff, deliverables and project reporting.

### **TASK OUTPUTS AND SPECIFIC DELIVERABLES:**

Communicate project objectives, progress and results to GISERA stakeholders according to standard GISERA project procedures which may include, but not limited to:

1. Communicate and engage with OGIA, UQ, industry and various government regulators are required to implement and communicate the project
2. Complete milestone reports, undertake project team meetings
3. Establish and engage with Technical Reference Group
4. Engage with industry and government and record these interactions via the GISERA communications register
5. Oversee overall project delivery and preparation of final reporting

### **PROGRESS REPORT**

This task is due June 2026.

## **TASK 2: Collection of well data, gas geochemistry data and collation**

### **BACKGROUND**

Well data required to develop the model include stratigraphy, depth and ages for top of key formations, lithologies, coal layers, porosity, bottom hole temperature, pressure and vitrinite reflectance. Gas data from water bores including concentrations as well as stable C and H isotopic compositions of methane are required to determine the volumes and origin of gas.

### **TASK OBJECTIVES**

Collate the data from well completion reports, OGIA database and other company reports where accessible. Communicate with the operating companies to access data that are not publicly accessible. Structural, stratigraphic and geochemical database construction.

### **TASK OUTPUTS AND SPECIFIC DELIVERABLES:**

The area of interest (AOI) for the basin model will be determined according to availability of suitable data. A database of available data compiled in Excel and included in the Petromod or Trinity basin modelling package.

### **PROGRESS REPORT**

This milestone is completed.

There was a significant delay in receiving well and geological model data and they were only received during November 2024. We have now incorporated these data in a excel database and currently QCing the data. During the QCing process we noticed several issues with the depth structure maps, which need to be highlighted in the report as uncertainties that will affect parts of the petroleum systems model. We have also flagged these issues with provider as feedback on their geological model.

### **TASK 3: Hydrochemistry data collection and collation**

#### **BACKGROUND**

Previous studies (e.g. Mallants et al., 2014 and Raiber and Suckow, 2017) suggested that there are distinct relationships between concentrations of major and minor ions and methane in many groundwater samples in the Hutton and Precipice sandstones. While pre-CSG development methane concentration baseline data are limited throughout the Surat and Bowen basins, there are abundant pre-CSG development hydrochemistry data available.

#### **TASK OBJECTIVES**

Collate and QA/QC hydrochemistry data from published literature, industry, the Queensland groundwater and the OGIA data bases in the Surat and Bowen basins. Integrate with data from Task 2 and identify spatial patterns in hydrochemistry (major and minor ions) and methane data for Hutton and Precipice sandstones. Use multivariate statistics to determine if there are correlations of hydrochemistry and methane and if major and/or minor ion hydrochemistry can under certain conditions represent proxies for presence/absence of methane where no measured methane concentrations exist; in bores where high post CSG-development methane concentrations have been observed and where long-term (decadal) hydrochemistry data are available, determine if any changes in hydrochemistry have occurred that could be explained by an increased degree of connectivity.

#### **TASK OUTPUTS AND SPECIFIC DELIVERABLES:**

An inventory of available hydrochemistry data for the Hutton and Precipice sandstone throughout the assessment area (combined with gas data collated as part of Task 2) will be created in Excel or Access. Hydrochemistry data are a fundamental component of conceptual hydrogeological models, and the results of Task 3 will be integrated with other lines of evidence to inform conceptual hydrogeological models developed in Task 4.

#### **PROGRESS REPORT**

This milestone is completed.

There was a significant delay in receiving hydrogeochmeistry and gas concentration data and they were only received during November 2024. We have now incorporated these data in an excel database and currently QCing the data. During the QCing process we noticed several issues with consistency in data recording, which are likely caused by errors in the measurement units for gas concentration. We are currently in the process of correcting units to ensure that measurement units are consistent for all data. Additional data were also received from UQ and Geoscience Australia which are being QCd. Data from all sources are currently combined into a master spreadsheet.

We have held multiple meetings with different government agencies to learn about which areas may be of particular interest and learn about any additional data sources and anecdotal evidence of gas shows in water bores.

### **Variations to Project Order**

Changes to research Project Orders are approved by the GISERA Director, acting with authority, in accordance with the [GISERA Alliance Agreement](#). Any variations above the GISERA Director's delegation require the approval of the relevant GISERA Research Advisory Committee.

The table below details variations to research Project Order.

**Register of changes to Research Project Order**

DATE	ISSUE	ACTION	AUTHORISATION

**As Australia's national science agency and innovation catalyst, CSIRO is solving the greatest challenges through innovative science and technology.**

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GISERA is a collaboration between CSIRO, Commonwealth and state governments and industry established to undertake publicly-reported independent research. The purpose of GISERA is to provide quality assured scientific research and information to communities living in gas development regions focusing on social and environmental topics including: groundwater and surface water, greenhouse gas emissions, biodiversity, land management, the marine environment, and socio-economic impacts. The governance structure for GISERA is designed to provide for and protect research independence and transparency of research.