Australia's National
Science Agency

GISERA | Gas Industry Social and Environmental Research Alliance

Progress report

Methane emissions quantification of well drilling to completion processes in Beetaloo sub-basin

CSIRO | Australia Pacific LNG | QGC | origin | Santos | NSW Government | Australian Government Department of Industry, Science, Energy and Resources | Supported by Government of South Australia | Queensland Government | Northern Territory Government

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	Baseline flux chamber measurements, initial manual tracer & calibration and validation data	Apr-21	Sept-22	Progress reported below
2	Monitoring station deployment, extension and maintenance	Apr-21	Aug-23	
3	Comparisons between flux measurements from tracer method and atmospheric modelling and inversion	Jul-22	Jun-23	
4	Determining the numbers and locations of AEMS and cost	Jul-21	Jan-23	
5	Project Reporting	Apr-21	Sept-23	
6	Communicate findings to stakeholders	Apr-23	Dec-23	

Project schedule report

TASK 1: Baseline flux chamber measurements, initial manual tracer & calibration and validation data

BACKGROUND

It is important to capture the baseline flux before operations commence to define the reference levels from which the impacts can be estimated. This pre-operational baseline will be captured using flux chamber measurements of the wellpad after clearing or before the commencement of operations if it is an existing well. In addition, to ensure high quality measurements, flux measurements of key operations will be collected manually using the tracer method.

TASK OBJECTIVES

1) To collect comprehensive soil flux data pre-commencement of the hydraulic fracturing operations.

2) 2) Manually collect comprehensive flux measurements using the tracer method at key points during the hydraulic fracturing processing to expedite the data collection at the initial stages and for calibration and validation of the results from the AEMS.

TASK OUTPUTS AND SPECIFIC DELIVERABLES:

1) The initial results will be documented in a section of an overall report in Task 5 6 months from commencement of the hydraulic fracturing process documenting the baseline soil flux levels and initial results from the hydraulic fracturing process; 2) The results overall report from the hydraulic fracturing process from the first two wells where manual tracer measurements were made will be reported in a section of an overall report in Task 5 12 months from the commencement of the work.

PROGRESS REPORT

This task requires the development of brand new wells (not where a previous well exists). There have been no such brand new wells since the project commenced so the team are unable to commence the work related to flux chamber measurements. The deployment of a monitoring station has been achieved and data has been acquired for that well site however COVID-19 travel restrictions hampered fieldwork to manually collect tracer data during critical events during drilling within the past year.

The drilling of wells has been delayed due to the lack of availability of drilling rigs. Drilling is now not scheduled to started until at least August 2022. Therefore, we expect that the earliest start date for this work will be August 2022 (if the drilling starts). In addition, if the drilling does start in August, the team will conduct the manual tracer measurements to progress this task.

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
22/04/2022	Delays due to covid border restrictions and the additional requirement of the development of a new well have had an ongoing affect and caused delays for all tasks.	Milestone 1 delivery date extended 6 months, from March 2022 to September 2022.	
22/04/2022	Delays due to covid border restrictions and the additional requirement of the development of a new well have had an ongoing affect and caused delays for all tasks.	Milestone 2 delivery date extended 6 months, from March 2023 to August 2023.	
22/04/2022	Delays due to covid border restrictions and the additional requirement of the development of a new well have had an ongoing affect and caused delays for all tasks.	Milestone 3 delivery date extended 6 months, from March 2023 to June 2023.	
22/04/2022	This work has been delayed due to key personnel being on maternity leave.	Milestone 4 delivery date extended 6 months, from July 2022 to January 2023.	
22/04/2022	Delivery date has been revised to reflect changes for the tasks above.	Milestone 5 delivery date extended 6 months, from	

		March 2023 to September 2023.	
22/04/2022	Delivery date has been revised to reflect changes for the tasks above.	Milestone 6 delivery date extended 6 months, from June 2023 to December 2023.	

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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.