



# GISERA

Gas Industry Social and  
Environmental Research Alliance

## Project Order, Variations and Research Progress

Project Title: [Microbial degradation of chemicals and fluids in aquifers of the Limestone Coast, South Australia](#)

This document contains three sections. Click on the relevant section for more information.

- Section 1: [Research Project Order as approved by the GISERA South Australia Regional Research Advisory Committee before project commencement](#)
- Section 2: [Variations to Project Order](#)
- Section 3: [Progress against project milestones](#)





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

# 1 Original Project Order



**QGC**



**Santos**



Australian Government  
Department of Industry,  
Innovation and Science



Supported by  
**Government of  
South Australia**



**NORTHERN  
TERRITORY  
GOVERNMENT**




## 2 Variations to Project Order

Changes to research Project Orders are approved by the GISERA Director, acting with authority provided by the GISERA National Research Management Committee, in accordance with the [National GISERA Alliance Agreement](#).

The table below details variations to research Project Order.

### Register of changes to Research Project Order

Date	Issue	Action	Authorisation
28 <sup>th</sup> September 2020	Due to border closures, planning a field campaign has been difficult and therefore delayed.	All milestones have been pushed back by 2 months, the new project delivery date will be September 2021.	





### 3 Progress against project milestones

Progress against milestones are approved by the GISERA Director, acting with authority provided by the GISERA National Research Management Committee, in accordance with the [National 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 approved for one amber light.
    - 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 and undertaken by GISERA Regional Research Advisory Committee.
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

ID	Activities / Task Title	Task Leader	Scheduled Start	Scheduled Finish	Predecessor
<b>Task 1</b>	Briefing document for sampling campaign	Kaydy PINETOWN	Aug 2020	Nov 2020	None
<b>Task 2</b>	Sample collections- soil and water	Richard SCHINTEIE	Feb 2021	Mar 2021	Task 1
<b>Task 3</b>	Baseline microbial community profiling complete and raw data available	Carla MARIANI	Nov 2020	Apr 21	Task 2
<b>Task 4</b>	Chemical degradation and sole carbon growth assays complete and data prepared for final report	Nai TRAN-DINH	Dec 2020	Aug 2021	Task 2
<b>Task 5</b>	Impact and indicator taxa identified and data prepared for final report	Nai TRAN-DINH	Dec 2020	Aug 2021	Tasks 1, 2, 3 & 4
<b>Task 6</b>	Metagenomics	David MIDGLEY	Feb 2021	Sep 2021	Task 4 (partial)
<b>Task 7</b>	Data analysis and reporting	David MIDGLEY	Aug 2020	Sep 2021	All other tasks.



## Project Schedule Report

### Task 1

**TASK NAME:** Logistics, planning, contacting stakeholders

**TASK LEADER:** Kaydy PINETOWN

**OVERALL TIMEFRAME:** August - September 2020

**BACKGROUND:** During Task 1 we consult with colleagues in the South Australian Departments of Energy and Mining (DEM), and Environment and Water (DEW) to guide the sampling campaign to ensure that hydrogeological and physicochemical heterogeneity in the TLA is captured. In addition, we will contact relevant landholders who use water from the TLA. This will include replicated samples from viticulture, cattle and sheep farms, grain farms along with fruit, vegetable and tree nut farms, and will ensure that the heterogeneity in the TLA is adequately covered.

#### TASK OBJECTIVES:

- 1) Establish contacts with colleagues in the South Australian Departments of Energy and Mining (DEM), and Environment and Water (DEW) to guide the sampling campaign to ensure that hydrogeological and physicochemical heterogeneity in the TLA is captured.
- 2) Establish contacts with relevant landholders who use water from the TLA and identification of any permits, permission or consultation required for sampling.
- 3) Confirm the relevance of chemicals being tested in the project i.e. that they are still relevant for onshore gas production in the Limestone Coast region.
- 4) Identification of sites for aquifer collections. With a view to ensuring a good spread of sampling across the region.
- 5) Ordering and preparation of sampling equipment/reagents, vehicles and OH&S considerations.

**TASK OUTPUTS AND SPECIFIC DELIVERABLES:** This task will yield a series of documents describing the contacts, sampling sites, relevant permissions, sampling equipment and OH&S considerations.

#### PROGRESS REPORT:

The South Australian Departments of Energy and Mining (DEM), and Environment and Water (DEW) have been consulted regarding the hydrogeological and physicochemical heterogeneity in the TLA, and the regions for sampling have been determined to ensure that this heterogeneity will be met. Samples will be taken from across the TLA Hydrogeological Provinces 1 and 2, inclusive of the Zones 1A to 6A. Consultation with the Department of Primary Industries and Regions, South Australia regional coordinator (Peta Crewe) for the Limestone Coast, Department for Environment and Water (David Williamson) and various Limestone Coast industry associations are complete and a list of landholders has been compiled for sampling. Sampling was confirmed with 10 landowners from 24.02-26.02 and 01.03-02.03.. Only four land use types will be sampled (pasture, small seed, vegetable and orchard production). Preparations and ordering for the sampling campaign are complete. Staff are departed NSW on the 22/02/2021, and returned 06/03/2021.



## Task 2

**TASK NAME:** Sampling campaign

**TASK LEADER:** Richard Schinteie

**OVERALL TIMEFRAME:** February – March 2021

**BACKGROUND:** Task 2 will involve two staff travelling to the Limestone Coast region of South Australia with the purpose of collecting aquifer samples across the region under a variety of land-use practices.

### TASK OBJECTIVES:

- 1) To collect triplicate preserved aquifer samples from the sites identified by Task 1.
- 2) To collect triplicate microbiological ('live') aquifer samples (under CO<sub>2</sub> or other gas headspace) from each of the five land use types (viticulture, animal grazing, grain growing, fruit and tree nut farms, and vegetable farms).
- 3) To collect bulk aquifer samples (4x5L) to match the microbiological ('live') aquifer samples.

**TASK OUTPUTS AND SPECIFIC DELIVERABLES:** Collection of microbially preserved aquifer samples, anoxic aquifer samples and bulk samples to establish microcosms.

### PROGRESS REPORT:

Richard Schinteie and Carla Mariani successfully completed the sampling campaign collecting a total of 154 aquifer samples from 10 landowners across 21 sites. Microbially preserved aquifer samples were collected from all sites; live microbiological samples and bulk water samples were collected from 7 sites covering each of four land use types and six hydrogeological zones. The sampling campaign commenced 22<sup>nd</sup> February and finished 6<sup>th</sup> March 2021.

All landowners have been contacted to thank them for their assistance with the sampling campaign.

Sampling processing is underway

