

# MEETING MINUTES

## Narrabri Gas Project (NGP)

### Water Technical Advisory Group (WTAG)

#### DATE / TIME

Thursday 10<sup>th</sup> November 2022  
9:07am

#### LOCATION

Teams meeting / Shop Front Conference Room

#### FACILITATOR

Garry West

#### MINUTE TAKER

Lyn Firth

#### ATTENDEES

- ◆ Garry West (Independent Chair)
- ◆ Cate Barrett (DPIE Water) (MS Teams)
- ◆ David Gornall (Santos) (MS Teams)
- ◆ Randall Cox (Independent Expert)
- ◆ Mike Williams (Independent Expert)
- ◆ Todd Dunn (Santos)

#### GUESTS

- ◆ Servaes van der Meulen (Onward) (MS Teams)
- ◆ Keith Phillipson (AGE) (MS Teams)

#### APOLOGIES

- ◆ Conrad Bolton (Local groundwater user)
- ◆ Jack Warnock (Local groundwater user)
- ◆ Fabienne d'Hautefeuille (DPIE Water)
- ◆ Edward Trindall (Narrabri LALC)

## Discussions

NO.	DISCUSSIONS
1. Welcome	Chair welcomed and thanked all members for their attendance and acknowledged Gomeroi country on which the meeting was held as well as Elders past, present and future and all Aboriginal persons present.
Recording of Minutes	The chair asked members if there was any objection to the recording of the minutes for secretarial purposes with the minute's audio being deleted once the minutes were final and approved. There was no objection.
Confirmation of Minutes/actions	Minutes of last meeting circulated and uploaded to the website. Actions update listed in actions table.
2. Correspondence	Nil

<p>3. Presentations – Santos</p>	<p><i>Santos Corporate Update – Todd</i></p> <p>Investor Day was held on 8<sup>th</sup> November 2022 – presented by Santos CEO. The presentation is available on the Santos website.</p> <p>Todd spoke to “Vision 2040” – strong demand for Santos’ product now and into the future, but also the need to decarbonise these critical fuels, in line with target of net-zero emissions by 2040.</p> <p><i>Narrabri Gas Project Update – Todd</i></p> <p>Field Development Plan is being finalised.</p> <p>The Appraisal Program will commence when all management plans are approved, and conditions of consent are met. This stage will mean the consent has been taken up and means the formal adoption of the consent conditions and compliance with those conditions.</p> <p><i>NGP indicative timeline and scope – Todd</i></p> <p>The scope has not changed although the timing is a bit slower than first anticipated, but everything is consistent with previous reporting.</p> <p><i>Hunter Gas Pipeline - Todd</i></p> <p>Involved in landowner consultation. Ecological surveys are in progress before the route can be finalised.</p> <p><i>Other Matters – Todd</i></p> <ul style="list-style-type: none"><li>• REF approved for the seismic program (Bando) need Gunnedah. It is hoped that is underway in December.</li><li>• Santos will soon be submitting a REF to reactivate existing pilot wells located near Gunnedah. These actions are consistent with our tenure renewal.</li><li>• Also progressing Santos are in the process of consultation with landowners and working towards submitting scoping report to the DPE for a 50 to 60km pipeline to connect the Narrabri Gas Project to the Hunter Gas Pipeline.</li></ul> <p><i>Field Development Plan – Servaes</i></p> <p>This meeting is focussing on the comments received from this working group (WTAG). All comments and responses are in the Field Development Plan which will be submitted to DPE.</p> <p>The FDP is a summary of all the other management plans and for detail and the reader needs to reference back to other management plans. It should be read in consultation with the Field Development Protocol.</p> <p>Once the final advisory meetings are completed tomorrow, the final version incorporating feedback will be circulated through the chair.</p>

*DPIE Feedback of the Water management Plan - Dave*

An update was provided by Santos regarding the more significant changes to the Groundwater Management Plan that resulted from feedback Santos had received from DPE during consultation on the Water Management Plan. This feedback was received after the WTAG had provided advice on the same plans.

- Level 3 triggers were added - to monitor changes in groundwater quality of the Pilliga Sandstone.

Q. (Mike) How were the water quality samples collected? Was the method of sampling recorded?

A. (Dave) The usual low flow sampling points were used, and low flow procedures followed, and lab analysis occurred. They were field collected, and lab analysed. There are firm procedures documented and followed.

- Trigger action response plan – TARP flowchart was updated to show more detail regarding minimum government notifications and trigger investigation process.
- Trigger monitoring of CSG water production – Santos added more frequent checks against total CSG water production volume, and committed to reporting and comparing operational well durations against a forecast.
- Improvement of the Groundwater Model to Phase 2 – greater specificity of the model improvement steps that would be followed, plus a commitment to consult with government at various steps.

*Groundwater model improvement prior to Phase 2 - Dave*

Santos presented the 6 stages that will lead to model improvement prior to Phase 2 of the NGP. WTAG will be informed and will need to advise along the way. Number of milestone reports are proposed, at Stage 1 (model objectives), Stage 2 (initial model conceptualisation), Stage 5 (updated model conceptualisation) and Stage 6 (updated groundwater model).

Santos has met with DPE Water to discuss model objectives and criteria. An update on this will be discussed in today's meeting. This is being driven by condition B39.

The Water Management Plan cannot be finalised until there is a final Groundwater Model for Phase 2 because the findings of that Groundwater Model for Phase 2 will underpin setting the triggers and monitoring plans and justifies that the next phase of the project will meet the consent conditions.

Keith has recently presented this to DPE Water. At the department's request, model objectives and model conceptualisation have been split.

Model objectives must be prepared early in the project and be reviewed regularly throughout the process. The consultation process is important – promotes agreements and manages expectations. The program does have review processes inbuilt. The scope of modelling will be subject to change as Phase 1 proceeds.

<p><b>Groundwater Model Development</b>          Keith Phillipson</p>	<p>One of the key things for Phase 1 is proving the target model confidence class reference to class 3 per the Australian Groundwater modelling Guidelines. Class 3 is the highest level.</p> <p>The Groundwater modelling guidelines are under review and one of things that might disappear is the model classification idea because it is so subjective. This does not really change anything in for Santos.</p> <p><i>“Model Complexity” by John Doherty and Catherine Moore</i> -Excellent guidelines (not Australian) but is gaining traction in the industry. This is providing background to where the objectives and modelling scope are coming from for this project.</p> <p>This guideline will be distributed to WTAG members following the meeting.</p> <p>Keith presented various aspects of modelling objectives with a view of updating. It was agreed that the primary objective of the groundwater model was to predict potential drawdown impacts in the surrounding aquifers due to CSG water extraction. Secondary objective is to predict leakage (indirect take) between formations.</p> <p>There was discussion about the requirements of the NGP groundwater model to interface with the existing groundwater model for the Namoi Alluvium, and potentially also the groundwater model for Narrabri Coal Mine. There was an expectation that the NGP groundwater model would explicitly model the impact on the Pilliga Sandstone as the current government model in this area was statistical not numerical.</p> <p>Keith presented the model class criteria, and identified that most model class indicators that would be expected to improve, and move towards Class 3 prior to Phase 2 – as required by the NGP Conditions of Consent.</p> <p>Keith also showed that a small number of indicators were unlikely to move much closer to a Class 3. This is because the predictive model timeframe will far exceed that of the calibration period. It is fundamental for project stakeholders to accept this practical limitation at the outset of the model improvement process. This limitation will be presented in the Model Objectives Report which will be circulated for consultation with WTAG members.</p> <p>The intent is to send out a report for members by the beginning of December for review with the hope of receiving feedback before Christmas. The process would work better if it was peer reviewed. Although there is no one identified as yet to take that role, it is thought that they would attend the WTAG meeting as an observer. This person would need to be approved by DPE Water.</p>
<p><b>General Business</b></p>	<p>Next meeting to be held mid-February. To address feedback on the objectives modelling criteria report and be ready to present the conceptual model.</p> <p>Meeting closed at 11:18am.</p>

<b>NO.</b>	<b>ACTIONS</b>	<b>ACTION BY</b>	<b>DUE DATE</b>
1	Send out Paper "Model Complexity" by John Doherty and Catherine Moore to WTAG participants	Garry West	At conclusion of advisory meeting
2	Circulation of Report by Keith Phillipson for review by member	Keith Phillipson	Beginning of December
3	Circulation of Field Development Plan	Garry West	ASAP