



Memo

To FTAA Expert Panel
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Nigel Mark-Brown
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Date 18 February 2026

From Jon Williamson

Project No WWLA0321

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Subject **Ashbourne [FTAA-2507-1087]: Stormwater disposal hydrogeological assessment**

1. Introduction

On 15 February I received an email from Nigel Mark-Brown requesting assistance with regard to hydrogeological assessment undertaken for the stormwater disposal Basin A.

The specific instructions were as follows:

- Review the latest WGA memo dated 10 February, which was prepared in response to questions from the panel requiring clarification of a potential hydraulic conductivity error in a previous WGA memo dated 18 November, together with clarification of depth to groundwater used in stormwater disposal mounding assessment, updated groundwater level measurements, and revised mounding analysis results;
- Provide an opinion on the proposed regional stormwater discharge consent conditions, which do not include recommendations from the Joint Witness Statement.

2. Review of WGA 10 Memo February 2026

I have reviewed the memo. In response to your questions, please consider my thoughts as follows:

- **Hydraulic conductivity:** WGA confirmed that there was a typo in their 18 November memo and that a hydraulic conductivity value of 1.53 m/day ($\sim 1.8 \times 10^{-6}$ m/s) was used. This is acceptable as it represents a value that is middle of the anticipated range for Silty SAND and the lower end of the anticipated range for Clean SAND.
- **Starting or initial groundwater level:** In the mounding assessment, a number of initial groundwater level values have been assessed (3.0 m below top of basin (mBTOB), 6.0 mBTOB and 5.2 mBTOB. In the latest memo, it appears that a new value was adopted based on December 2025 level because groundwater level had risen since the piezometer was installed in September 2025.

My concern is that there seems to be a material disconnect between the objectives of stormwater design, which is to provide a solution for the design storm criteria, whether that be 10 year average recurrence interval (ARI) event or 100 year ARI event. Consequently, I'm uncertain that the scenario modelled is realistic or in fact conservative – that is during the design storm event, which by nature are rare, groundwater levels are likely to be higher than everyday groundwater levels. Whilst discussed in the JWS, no attempt has been made to synthesise what the design storm event groundwater levels at this site would be.

Without a prediction of groundwater levels under the design storm event, it is not possible to compare pre-development (without soakage) versus post-development groundwater levels (with soakage) at the site, and therefore not possible to assess the adequacy of the soakage basin.

- **Soakage rates:** The model suggests a storage volume target of 13,650 m³/day. There is no description of how this was determined – presumably to was provided to the hydrogeologists by the stormwater engineers. Nevertheless, the actual soakage volumes modelled vary (depending on scenario) between 1,890 to 2,145 m³/day, which represents 14 to 16% of the target. There is no discussion of the implications of this finding, hence in the absence of time for further request for further information from the applicant, the conclusion I have drawn is that the stormwater disposal system has inadequate capacity to manage the volumes required under the design storm. Furthermore, with higher groundwater levels expected during a storm event, the capacity would be further undermined.

3. Proposed Regional Stormwater Discharge Consent Conditions

The draft consent conditions proffered by the Applicant on 13 February 2026 do not adequately address the uncertainty, primarily because:

- a) they do not include recommendations from the JWS including:
 - Additional groundwater level monitoring sites equipped with datalogger pressure sensors to be constructed on site including two nested piezometers in the deepest part of the basin.
 - Applicant to prepare a groundwater level synthetic hydrograph and peak recharge analysis (i.e. intensity and recurrence intervals) for the site to inform detail design.
 - Detailed design phase certification process involving expert hydrogeologist input with MPDC and WRC.
 - A requirement for a stormwater management plan covering maintenance and operation of the drainage network including expert hydrogeologist input.
- b) they rely on a yet to be finalised Stormwater Management Plan, which does not include appropriate consideration of the hydrogeological aspects and a certification process involving hydrogeological experts prior to construction.

4. Conclusion

On the basis of the above findings, I currently have little confidence that the stormwater disposal basin will have the required capacity during the design storm events.

Furthermore, the draft consent conditions provide no pathway for addressing the areas of uncertainty identified.

Yours sincerely,



Jon Williamson
Managing Director/Principal Hydrogeologist

