

Hoffmann Drilling Pty Ltd Superannuation Fund v Gold Coast City Council & Ors Planning and Environment Court Appeal No 137 of 2020

Supplementary Report on Groundwater by Professor Currell

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Introduction

1. I am the groundwater expert appointed by the Second Co-Respondent by Election (**ARCS**) to assist the Court in Appeal No. 137 of 2020.
2. I have prepared, or been involved in the preparation of, the following reports in this appeal:
 - (a) Joint Expert Report on Groundwater Issues, dated 23 October 2020, eTrial Doc 01.02 (**Groundwater JER 1**);
 - (b) Joint Expert Report on Groundwater Issues by groundwater and ecology experts, dated 4 August 2021, eTrial Doc 01.10 (**Groundwater JER 2**);
 - (c) Further Statement of Evidence – Groundwater, dated 3 December 2021, eTrial Doc 08.01 (**my Separate Report**); and
 - (d) Third Groundwater Joint Expert Report dated 17 May 2022, [eTrial document number not yet assigned] (**Groundwater JER 3**).
3. My Separate Report records that:
 - (a) I inspected the site the subject of the appeal (**site**) in January 2021 (**my original site visit**);
and
 - (b) I also relied on photographs taken by Ms Elanor Fenge during a site visit on 29 September 2021, which are documented in an affidavit sworn by Ms Fenge on 5 November 2021 (eTrial Doc 08.04) (**Ms Fenge’s Affidavit**).

4. During my original site visit, I inspected the site and adjacent areas to the east of the ridgeline, but did not inspect the area west of the ridgeline.
5. I was not able to attend the site on 29 September 2021 (when Ms Fenge visited) as I was in Melbourne, and unable to travel to Queensland due to COVID-19 travel restrictions at the time.
6. In the Groundwater JER 3, at [34] and [36], Dr Johnson criticised reliance on Ms Fenge's Affidavit as:
 - (a) "reliance on the observations made by a third party who is neither a hydraulic engineer nor a hydrogeologist is questionable"; and
 - (b) "Ms Fenge undertook no accurate measurement of levels on the western side of the ridge, and her observations are at best those of a person without technical expertise in either hydrogeology or hydraulic engineering."
7. To redress my inability to visit the site on in September 2021, and to address Dr Johnson's criticisms, I conducted an additional site visit on 16 September 2022 (**additional site visit**), which I describe below.

Additional site visit

8. **Figure 1** is an aerial photograph on which are marked:
 - (a) in yellow, the cadastral boundary of the site;
 - (b) in green, the route I walked on the additional site visit; and
 - (c) in red, the locations of photographs I took.
9. For ease of comparison, **Figure 2** reproduces Document 1 in Exhibit EMF-01 of Ms Fenge's Affidavit, showing the route walked, and location of photographs taken, by Ms Fenge during her visit on 29 September 2021.
10. During my additional site visit, I visited three areas, which are relevant to the groundwater issues:
 - (a) bores 1-10 on the site, near the road at the top of the ridgeline;

(b) groundwater springs on the eastern side of the ridgeline, at approximately 830m AHD;
and

(c) groundwater springs on the western side of the ridgeline, at approximately 830m AHD.

11. The primary purpose of my additional site visit was to inspect groundwater springs, but I took photographs of the bores for my own understanding and future reference.

12. During the additional site visit:

(a) on the eastern side of the ridgeline:

(i) I visited only groundwater springs either on the site itself or close to its northern boundary, without following Ms Fenge's full route to the north and south of the site;

(ii) I took photographs at, approximately, locations E2-E4 identified in Ms Fenge's Affidavit – **Attachments 1-3** to this report are the photographs I took at those locations.

(b) on the western side of the ridgeline:

(i) I followed the route taken by Ms Fenge; and

(ii) I took photographs at locations W1, W2, W3 and W6 identified in Ms Fenge's Affidavit – **Attachment 4** to this report sets out, for comparison, photographs Ms Fenge took at those locations on 29 September 2021 and photographs I took at those locations on 16 September 2022.

13. Figure 3 overlays:

(a) the approximate locations where Ms Fenge and/or I observed groundwater springs (i.e. E1-E5, W2, W3, W6, W8, W9 and W10 as shown on Figure 2);

(b) on Figure 11 (Modelled drawdown under no-rainfall scenario reproduced from SLR, 2022) of Groundwater JER 3.

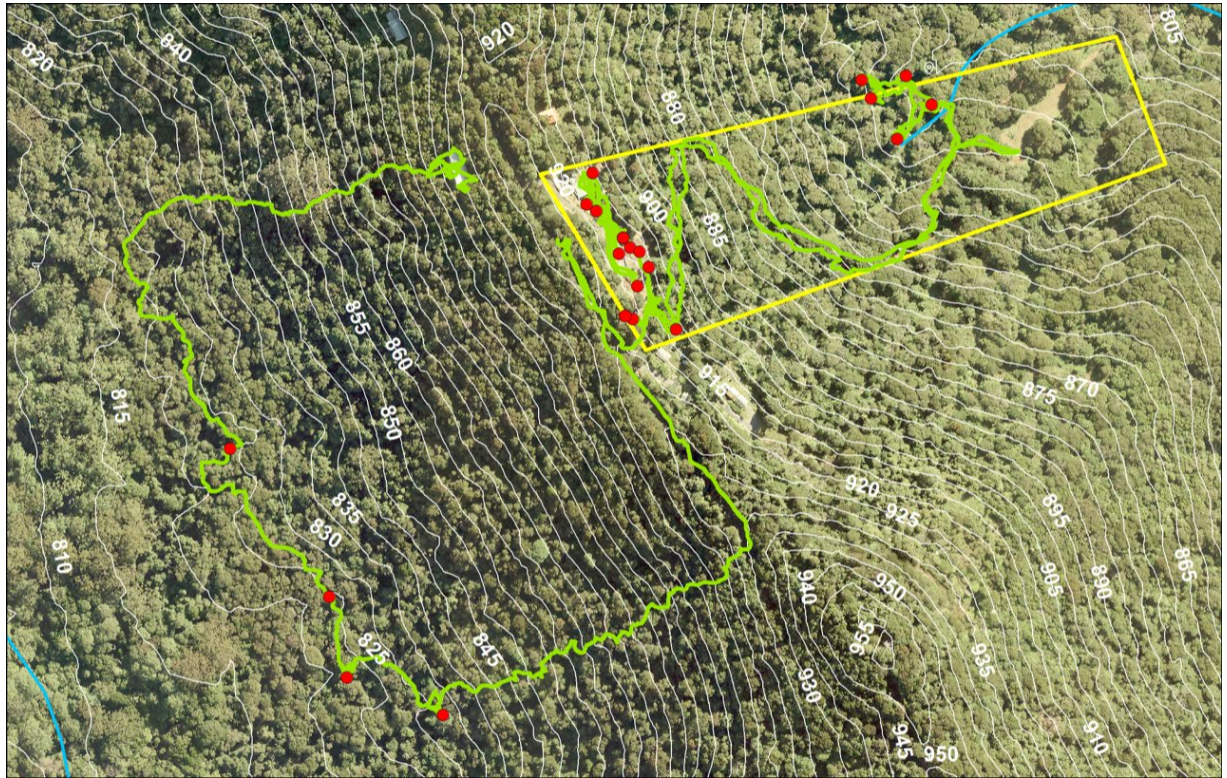


Figure 1 - Aerial photograph showing route and location of photographs taken during additional site visit on 16 September 2022

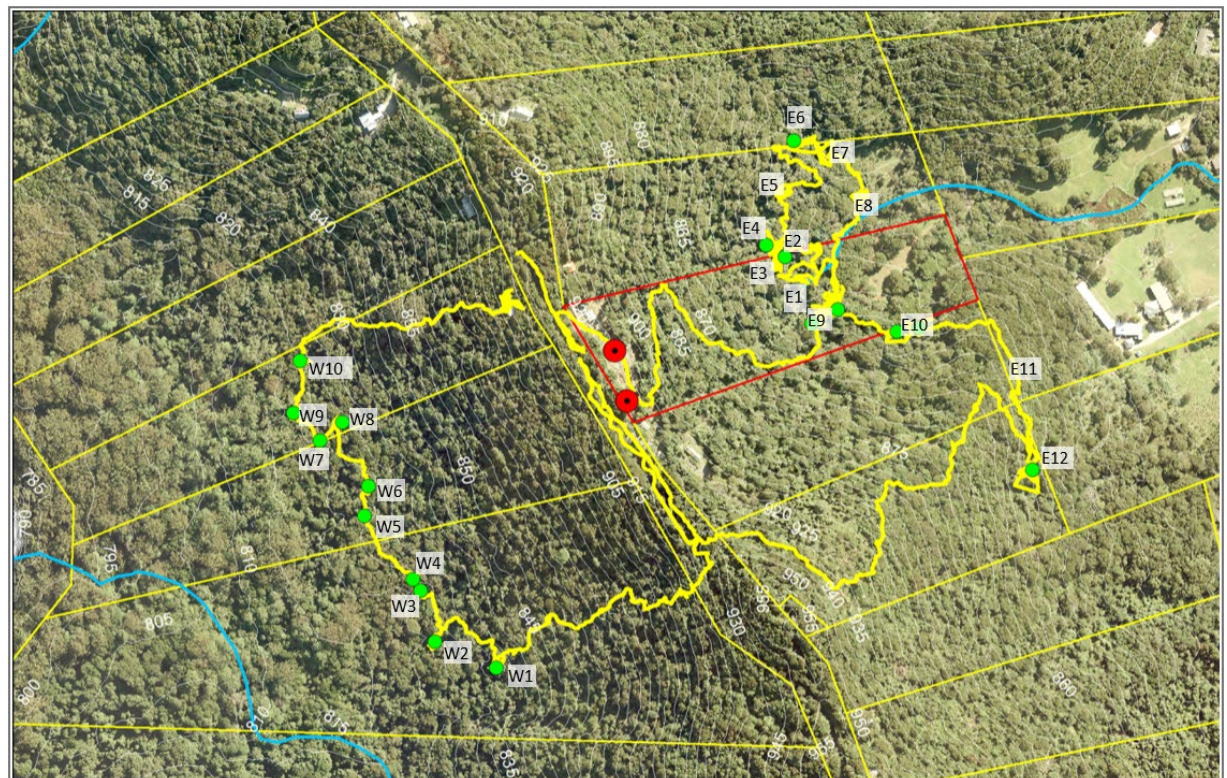


Figure 2 – Route and location of photographs taken by Ms Fenge on 29 September 2021 (copied from Document 1 of Ms Fenge’s Affidavit)

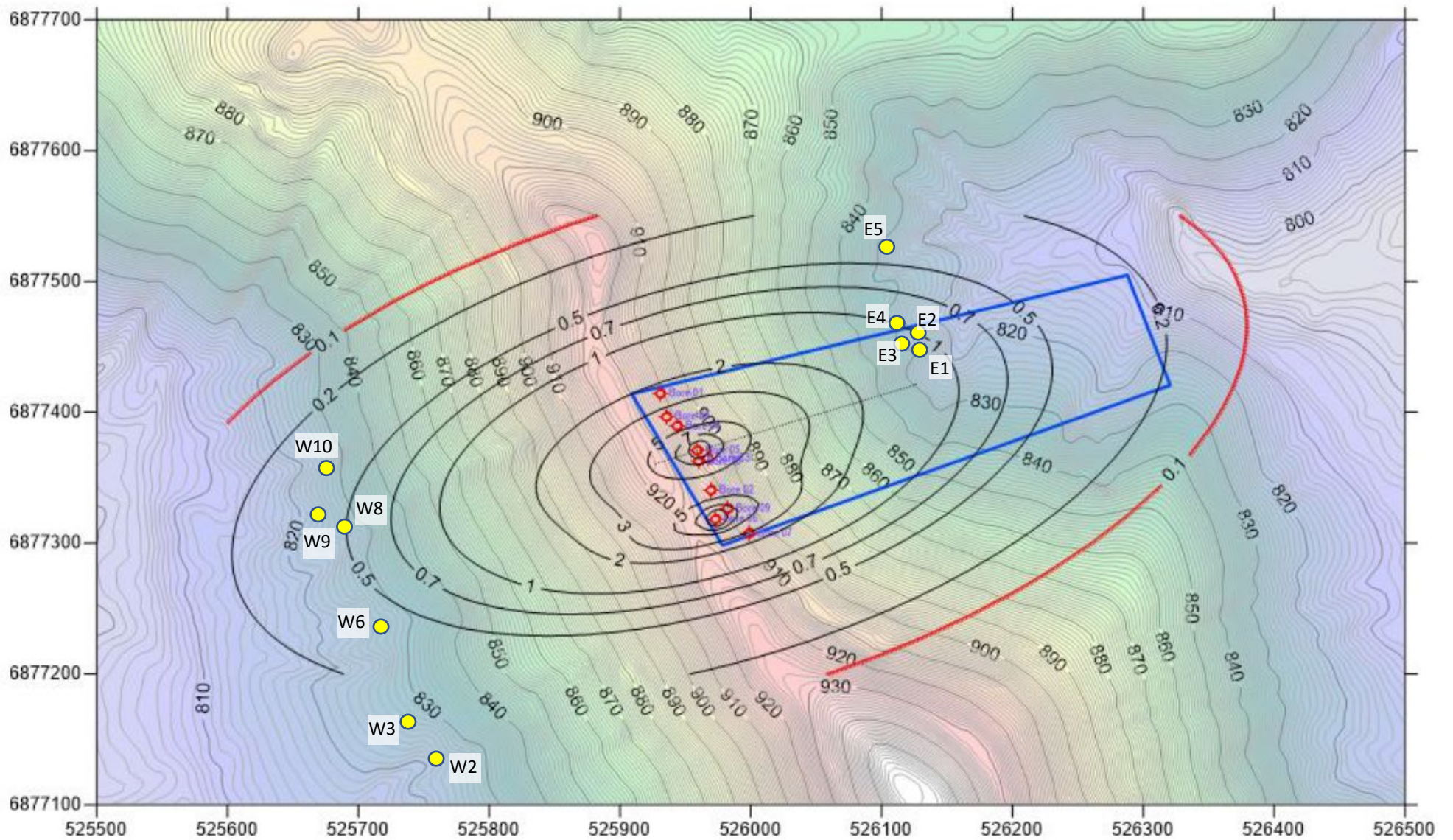


Figure 3: overlay of approximate locations where Ms Fenge and/or I (Professor Currell) observed groundwater springs east or west of the proposed pumping bores (i.e. E1-E5, W2, W3, W6, W8, W9 and W10 on Figure 2) on Figure 11 (Modelled drawdown under no-rainfall scenario reproduced from SLR, 2022) of Groundwater JER 3.

Conclusion

14. Based on my additional site visit:

- (a) on the eastern side of the ridgeline, although I did not follow the entire route taken by Ms Fenge, I am satisfied that the photographs taken, and observations made, by Ms Fenge in her affidavit, accurately reflect the landforms and features the subject of those photographs and observations; and
- (b) on the western side of the ridgeline, I am satisfied that the photographs taken, and observations made, by Ms Fenge in her affidavit, accurately reflect the landforms and features the subject of those photographs and observations.

15. I have not changed the opinions I expressed in Groundwater JER 1, Groundwater JER 2, Groundwater JER 3 and my Separate Report as a result of my additional site visit.

Declaration

16. I confirm and verify that:

- (a) the factual matters stated in this Supplementary Report are, as far as I know, true;
- (b) I have made all enquiries I consider appropriate;
- (c) the opinions I have stated in this Supplementary Report are genuinely held by me;
- (d) this report contains reference to all matters I consider significant;
- (e) I understand my duty to the Court and I have complied with the duty;
- (f) no access to readily ascertainable additional facts would assist me in reaching a more reliable conclusion;
- (g) I have not received or accepted instructions to adopt or reject a particular opinion in relation to an issue in dispute in this Planning and Environment Court proceeding.



Professor Matthew Currell

14th February 2023

Attachment 1 – Photograph of creekline beneath groundwater spring on the site taken by Professor Currell on 16 September 2022

Note: this photograph is taken in approximately Location E1 of Ms Fenge’s Affidavit.



Attachment 2 – Photograph of groundwater spring on the site taken by Professor Currell on 16 September 2022

Note: this photograph is taken in approximately Location E2 of Ms Fenge’s Affidavit.



Attachment 3 – Photograph of creekline beneath groundwater spring on the site taken by Professor Currell on 16 September 2022

Note: this photograph is taken in approximately Location E3 of Ms Fenge’s Affidavit.



Attachment 4 – Comparison of photographs taken by Ms Fenge in 2021 and Professor Currell in 2022 at locations W1, W2, W3 and W6.

Location W1 - Comparison of Photographs



Location W1 - Photograph by Ms Elanor Fenge on 29 September 2021



Location W1 – Photograph by Professor Currell on 16 September 2022

Location W2 – Comparison of Photographs



Location W2 - Photograph by Ms Elanor Fenge on 29 September 2021



Location W2 – Photograph by Professor Currell on 16 September 2022

Location W3 - Comparison of Photographs



Location W3 - Photograph by Ms Elanor Fenge on 29 September 2021



Location W3 – Photograph by Professor Currell on 16 September 2022

Location W6 - Comparison of Photographs



Location W6 - Photograph by Ms Elanor Fenge on 29 September 2021



Location W6 – Photograph by Professor Currell on 16 September 2022