

Submission seeking ministerial review of Water Controller’s decision to grant the new water extraction licence WDPCC10000 to Fortune Agribusiness

A. INTRODUCTION

1. On 8 April 2021, the Controller of Water Resources (**Water Controller**) made the decision to grant the following water extraction licence WDPCC10000 (**Singleton Water Licence**) under section 60 of the *Water Act 1992* (NT) (**Water Act**):

Applicant	Volume of water (ML/year) and Beneficial Use	Land from which water may be taken and used
Fortune Agribusiness Funds Management Pty Ltd (Fortune Agribusiness)	A maximum entitlement of 40 000 to service the Singleton Horticultural Project which includes: <ul style="list-style-type: none"> • 39 800 for agriculture • 100 for public water supply and • 100 for industry 	Singleton Station NTP 653 (Singleton Station)

2. The Central Land Council (**CLC**) is a statutory authority established under section 21 of the *Aboriginal Land Rights (Northern Territory) Act 1976* (Cth) (**Land Rights Act**) and has functions and duties under Land Rights Act. These functions include:
- a) ascertaining and expressing the wishes and opinion of Aboriginals living in the area of the CLC as to the management of Aboriginal land in the area¹;
 - b) protecting the interests of traditional Aboriginal owners of, and other Aboriginals interested in, Aboriginal land in the area of the CLC²; and
 - c) assisting Aboriginals in the taking of measures likely to assist in the protection of sacred sites on land (whether or not on Aboriginal land) in the area of CLC³.
3. Singleton Station is subject to a native title determination, *Rex on behalf of the Akwerlpe-Waake, Iliyarne, Lyentyawel Ileparranem and Arrawatyen People v Northern Territory of Australia* [2010] FCA 91 (**Singleton Determination**). Mpwerempwer Aboriginal Corporation (ICN: 7316) (**MAC**) is the prescribed body corporate for the purposes of section 57(2) of the *Native Title Act 1993* (Cth) (**Native Title Act**) and the registered native title body corporate for the purpose of performing the functions in section 57(3) of the Native Title Act in relation to the Singleton Determination.
4. The CLC is the recognised Aboriginal/Torres Strait Islander body for the southern region of the Northern Territory pursuant to section 203AD of the Native Title Act which includes Singleton Station.
5. The function of a native title representative body includes the performance of the assistance and facilitation functions set out in section 203BB of the Native Title Act. The carrying out of such functions is governed by a service agreement between CLC and MAC.
6. The CLC represents affected native title holders for Singleton Station, traditional Aboriginal owners of neighbouring Aboriginal land trusts including Warrabri Aboriginal Land Trust (**Warrabri ALT**) and Iliyarne Aboriginal Land Trust (**Iliyarne ALT**) and

¹ Section 23(1)(a) of the Land Rights Act
² Section 23(1)(b) of the Land Rights Act
³ Section 23(1)(ba) of the Land Rights Act

residents of the affected Aboriginal community of Alekerange (together, the **affected Aboriginal constituents**).

7. The affected Aboriginal constituents are persons who are aggrieved by the decision of the Water Controller to grant the Singleton Water Licence for the purposes of section 30(1) of the Water Act:

a) **Native title holders have rights and interests over lands and waters in Singleton Station**

The Singleton Determination covers the *lands and waters* over Singleton Station. The native title holders' rights and interests include⁴:

- (i) the right to hunt, gather, take and use the natural resources of the land and waters, including the right to access, take and use natural water resources on or in the land;
- (ii) the right to access, maintain and protect places and areas of importance on or in the land and waters;
- (iii) the right to engage in cultural activities and teach the physical and spiritual attributes of places and areas of importance; and
- (iv) the right to share and exchange natural resources obtained on or from the land and waters, including traditional items made from the natural resources.

With the projected groundwater drawdown of up to 50 metres in the Singleton Station⁵ and the potential impact on groundwater dependent ecosystems (**GDEs**)⁶, the Singleton Water Licence affects the exercise of native title rights and interests by native title holders.

b) **Aboriginal persons have rights to enter, use or occupy Aboriginal land in accordance with Aboriginal tradition.**

Aboriginal land trusts hold Aboriginal land for the benefit of Aboriginals entitled by Aboriginal tradition to use or occupy the land concerned⁷.

The Water Controller notes that a report prepared for Fortune Agribusiness by GHD titled "Singleton Horticulture Project Groundwater Dependent Ecosystem Mapping and Borefield Design" (**Fortune Report**) indicates that "*groundwater drawdown will extend beneath the Iliyarne ALT and may result impacts in GDEs on that land trust*"⁸.

Given the groundwater drawdown and the potential negative impact on GDEs on Warrabri ALT and Iliyarne ALT, the rights of Aboriginals, including traditional Aboriginal owners, to use and occupy Aboriginal land will also be affected.

8. On behalf of affected Aboriginal constituents, MAC, Warrabri ALT and Iliyarne ALT, the CLC applies to the Minister to review the decision by the Water Controller to grant the Singleton Water Licence (**Water Controller Decision**).

⁴ Paragraph 4 of the Singleton Determination

⁵ Paragraph 66 of the Statement of Decision by the Water Controller for the Singleton Water Licence dated 8 April 2021 (**Statement of Decision**)

⁶ See paragraphs 101 and 102 of the Statement of Decision

⁷ Section 4(1) of the Land Rights Act

⁸ Paragraph 48 of the Statement of Decision

9. We seek a review of the Water Controller Decision on the following grounds:
- a) The estimated sustainable yield used by the Water Controller and derived from the *Western Davenport Water Allocation Plan 2018 – 2021 (WDWAP)* is not an “*estimated sustainable yield*” within the meaning of sections 22B(5)(a) and 71B(3)(d) of the Water Act because it results in depletion of the aquifer underlying the Central Plain Management Zone and unacceptable impacts on the environment.
 - b) The Water Controller and the WDWAP fail to take into account the level and extent of uncertainty underlying the groundwater model for WDWAP (**Groundwater Model**) and the conditions imposed by the Water Controller in the Singleton Water Licence cannot address such deficiency (because the level of uncertainty has not been quantified and insufficient investigation has been undertaken).
 - c) The Water Controller Decision fails to take into account the impact that the Singleton Water Licence will have on Aboriginal cultural values.
 - d) The “*Guideline: Limits of acceptable change of groundwater dependent vegetation in the Western Davenport Water Control District*” (**Guideline**) is inconsistent with the WDWAP and the Water Controller should not have relied on the Guideline.
 - e) The thresholds in the Guideline are arbitrary and the Water Controller fails to address the arbitrary nature of these thresholds in the way that she made the Water Controller Decision.
 - f) The authors of the WDWAP fail to assess the risks to aquatic GDEs in the Western Davenport District. The risks to the aquatic GDEs have not been considered in the Guideline, the Fortune Report and the Water Controller Decision.
 - g) The WDWAP and Guideline demonstrate a lack of understanding of region-specific vegetation GDEs and the use of criteria are not consistent with those used in other jurisdictions in Australia.
 - h) The Water Controller should not have granted the Singleton Water Licence for a term more than 10 years given the uncertainty underlying the Groundwater Model and the potential impacts arising from granting the Singleton Water Licence.
 - i) The Water Controller fails to address concerns raised by CLC about biodiversity surveys undertaken by the Northern Territory Government which may impact on the assessment of lack of threatened species.
 - j) Condition CP6 in the Singleton Water Licence does not sufficiently address the elevated soil salinity risks recognised in the Statement of Decision.

B. GROUND 1 – ESTIMATED SUSTAINABLE YIELD IN WDWAP NOT WITHIN THE MEANING OF “ESTIMATED SUSTAINABLE YIELD” IN THE WATER ACT

Ground 1: The estimated sustainable yield used by the Water Controller and derived from the WDWAP is not an “estimated sustainable yield” within the meaning of sections 22B(5)(a) and 71B(3)(d) of the Water Act because it results in depletion of the aquifer underlying the Central Plain Management Zone and unacceptable impacts on the environment.

10. In 2018, the Minister declared the WDWAP. Under the WDWAP, the estimated sustainable yield for the Central Plains Management Zone for the Western Davenport

Water Control District (**Western Davenport District**) was modelled at 112,720 ML/year (or 112 GL/year) with the consumptive pool being 87,720 ML/year (or 87 GL/year)⁹.

11. Estimated sustainable yield was considered “*to be equal to the sum of modelled evapotranspiration, plus 100% allocation of modelled recharge using the longest available rainfall record, plus the staged depletion of water stored in the regolith above 15 metres below ground level over 100 years*”¹⁰. Under this scenario, modelling of aquifer storage in the Central Plains Management Zone predicts a reduction in the volume of aquifer storage of 3.9% in 100 years (i.e. an average aquifer drawdown of 18.9 m assuming available aquifer storativity of 0.04) based upon full abstraction of the consumptive pool¹¹.
12. Section 22B(5)(a) of the Water Act provides that “*a water allocation plan is to ensure in the water control district that (a) water is allocated within the estimated sustainable yield to beneficial uses*”¹². In making her decision, the Water Controller relied on the estimated sustainable yield stated in the WDWAP to assess the availability of water in the Western Davenport District for use by Fortune Agribusiness for Singleton Station.
13. The term “*estimated sustainable yield*” is not defined in the Water Act. A definition of “*estimated sustainable yield*” is used in *Arnold v Minister Administering the Water Management Act 2000* [2014] NSWCA 386, the New South Wales Court of Appeal said (at [4]):

*“in this context and relevant to the issues in the appeal, the estimated sustainable yield of a groundwater system is determined by reference to the long-term average annual recharge of the system. The latter is capable of determination by groundwater numerical modelling using known or assumed physical parameters. **The sustainable yield is then that proportion of the long-term annual recharge of the system which may be extracted without causing unacceptable impacts on the environment or other groundwater users.** Unlike the determination of the relevant recharge of the system, the assessment of the sustainable yield involves matters of policy. Depending on the environmental circumstances, the sustainable yield may be 100% of the recharge or a lesser percentage.”*
14. “*Sustainable yield*” is defined in the *Oxford Dictionary of Environment and Conservation* (3rd edition) (emphasis added):

*“The rate at which a renewable resource may be used in a sustainable way. Traditional ways of harvesting natural renewable resources, such as fish from the oceans, wood from the forests, and plants and products from natural ecosystems, have usually been sustainable, **so long as the quantities extracted were not greater than natural processes were able to replace.**”*
15. A similar definition appears in *Merriam-Webster* dictionary:

“Production of a biological resource (such as timber or fish) under management procedures which ensure replacement of the part harvested by regrowth or reproduction before another harvest occurs.”

⁹ Table 2 in Section 1.1.2 of WDWAP, page 9.

¹⁰ Section 6.2 of WDWAP, page 33.

¹¹ Section 6.2 of WDWAP, page 33.

¹² Beneficial uses are defined in section 4(3) of the Water Act.

16. The key concept is a sustainable yield which is equal to or less than the long-term annual recharge of the system and so cannot result in depletion of the resource.
17. However, the “*estimated sustainable yield*” in the Water Controller Decision and the WDWAP contemplates and results in aquifer depletion¹³.
18. The grant of the Singleton Water Licence, using the estimated sustainable yield stated in the WDWAP, results in:
 - a) groundwater drawdown up to 50 metres after 30 years¹⁴; and
 - b) where the baseline depth to groundwater (**DGW**) is less than 15 metres:
 - (i) 26% of alluvial GDEs and 13% of sandplain GDEs on the Singleton Station may be impacted; and
 - (ii) 25% of alluvial GDEs and 15% of sandplain GDEs on the Central Plains Management Zone may be impacted after 40 years¹⁵.

CLC considers that such impacts on GDEs would result in unacceptable impacts on environment. This is particularly the case given that the relative importance (biodiversity and/or cultural values) of the GDEs is not known, i.e. those GDEs impacted may be the most important in terms of biodiversity and cultural values.

19. The CLC submits that allocation of water which result in:
 - a) the depletion of aquifers; and
 - b) unacceptable impacts on the environment,
 is not within the definition of “*estimated sustainable yield*” as contemplated in the Water Act.

C. GROUND 2 – UNCERTAINTY IN GROUNDWATER MODEL

Ground 2: The Water Controller and the WDWAP fail to take into account the level and extent of uncertainty underlying the Groundwater Model and the conditions imposed by the Water Controller in the Singleton Water Licence cannot address such deficiency (because the level of uncertainty has not been quantified and insufficient investigation have been undertaken).

20. The WDWAP recognises key issues underlying the Groundwater Model. These issues include:
 - a) the volumes presented in Table 3 (Management Zones – hydrogeological attributes) being largely theoretical based upon modelled thickness of the aquifers;¹⁶
 - b) groundwater recharge being highly episodic¹⁷ and recharge periods are rare and difficult to predict;¹⁸ and
 - c) water storage in regolith not being defined with the same precision as the modelled aquifer recharge.¹⁹ In fact, the water storage in the regolith is not referred to in the

¹³ Section 6.2 of WDWAP, page 33.

¹⁴ Paragraph 66 of the Statement of Decision

¹⁵ Paragraph 101 of the Statement of Decision.

¹⁶ Section 4.3 of WDWAP, page 21.

¹⁷ Section 4.3.1 of WDWAP, page 21.

¹⁸ Section 4.4.2 of WDWAP, page 23.

¹⁹ Section 7.4.6 of WDWAP, page 38.

report prepared by Anthony Knapton for the Department of Environment and Natural Resources in 2017 (**Knapton Report**). Section 7.4.6 of the WDWAP recommended that additional work be done to better define the regolith resource. Further work could result in the exclusion of this resource from the allocation for consumptive beneficial uses²⁰.

21. The Groundwater Model presented in WDWAP is simplistic and based on inadequate investigations and very little site-specific data. This is recognised in the WDWAP itself which states that “*The model is based upon the available data and has been calibrated to reflect the observed aquifer response. However, there are limitations to the available data, notably, the small number of bores, regolith resource is not included in the model and the aquifer and GDE response to pumping is largely inferred*”²¹. The key issues for the Groundwater Model are:

- a) **Lack of drilling and aquifer testing in the Singleton Station:** Most of the previous groundwater investigations have been undertaken in the central and eastern parts of the Central Plain Management Zone. Drilling in the area shows that the north and middle blocks of the proposed development in the Singleton Station are underlain by more than 160 metres of the Hooker Creek Formation which is a likely low yielding aquifer (as it is silt and mudstone dominated)²².

The Hanson River beds and Hooker Creek formation in the Wiso Basin (composed of silts and mudstones and with poor aquifer potential) have been classified as Hydrostratigraphic Unit 3 (HSU3) in the Knapton Report. This erroneously equates them with the more prospective carbonate and sandstone aquifers identified in the Georgina Basin which is to the east of the Singleton Station. This could introduce significant errors in terms of yields and water in storage and result in an underestimation of drawdown and pumping impact predictions.

This is a key example of why extrapolating groundwater investigation results from the other parts of the Central Plains Management Zone to the Singleton Station could be incorrectly interpreted which result in incorrect predictions. The assumption that Wiso basin sediments have the same aquifer characteristics as Georgina Basin sediments is simplistic and not consistent with known lithological differences between the two basins as described in the Fourth Annual and Final Surrender Report for EL 28211, EL 28213 and EL 28214.

- b) **Storage estimates based on modelling:** Storage estimates are based on modelling alone (with no direct measurements of the aquifer’s properties and ability to produce water at the Singleton Station). If these estimates are too high then storage will be reduced substantially and impacts will be greater than predicted.
- c) **Regolith aquifer based on little or no data:** The regolith, which accounts for 30.7 GL/year of the total of 112.7 GL/year²³ of estimated sustainable yield, is based on little to no data as this has not been investigated directly. There is no justification for incorporating this in the available water resources for allocation.

22. Water allocation planning and the development of the Groundwater Model for the Western Davenport District has been hindered (in terms of rigour) by a lack of spatially

²⁰ Section 7.4.6 of the WDWAP, page 38.

²¹ Section 9.1 of WDWAP, page 55.

²² See the Fourth and Final Surrender Project for Davenport Project (EL 28211, EL 28213 and EL 28214 held by Areva Resources Australian Pty Ltd) dated 13 February 2015 and authored by Rachael Wilson

²³ Table 5 (Natural Water balance (ML/year), section 4.4.2 of WDWAP, page 24.

distributed data on aquifer geometry, lithology, hydraulic properties (particularly storage properties), water levels and water quality. Water level data with any useful time series (in the context of long-term predictive modelling) is lacking in the development of the Groundwater Model, particularly in the regolith.

23. Aquifer testing data is sparse and is typically restricted to short duration and single borehole tests which cannot determine storage properties. Storage properties are a key control on the relationship between abstraction and groundwater level drawdown change which is the key focus of the modelling and allocation planning.
24. The Water Controller and the authors of the WDWAP have not attempted to quantify the level of uncertainty and how it affects basic assumptions of the WDWAP such as storage. If the level of uncertainty concerning storage and estimated sustainable yield is high, say 50%, then a decision to allocate 40,000 ML/yr from an estimated sustainable yield of 112,720 ML/year for the Central Plains Management Zone (but where 50% uncertainty would take that level significantly lower) is unreasonable. Under the 2011 plan, the estimated sustainable yield for the Central Plains Management Zone (taken as 80% of estimated annualised recharge) was 27,224 ML/year²⁴. There has been insufficient work undertaken to warrant the substantial increase in the estimated sustainable yield of 85,496 ML/year, from 27,224 ML/year to 112,720 ML/year
25. There is substantial work still required to be done under the WDWAP. The WDWAP sets out the work required to be done to address the uncertainties in the Groundwater Model (see section 7.4.5 of the WDWAP) and the regolith (see section 7.4.6 of the WDWAP). Additional work is set out in section 8.4.1 (Framework setting out WDWAP implementation activities)²⁵ and section 9.1 (Table of risk management treatments)).²⁶
26. CLC has previously submitted, in its submission in response to the Notice of Intention for the Singleton Water Licence, that the Water Controller should not consider any application for a groundwater licence in the Western Davenport District until such work has been completed. In the Statement of Decision, the Water Controller fails to address CLC's concerns and fails to identify the work in the WDWAP completed (if any) to refine and enhance the Groundwater Model.
27. The Water Controller claims that uncertainty in the Groundwater Model can be addressed by imposing the following conditions in the Singleton Water Licence:
 - a) field validation and mapping of the type and extent of GDEs on the Singleton Station;
 - b) development of a monitoring plan to detect potential impacts of groundwater extraction; and
 - c) an adaptive management plan to respond to triggers of potential impact on groundwater levels, quality and GDEs.²⁷
28. We submit that the conditions in the Singleton Water Licence are vague and deficient in addressing the uncertainty in the Groundwater Model. The key problem is that until the level and extent of uncertainty is known and the area better understood in a hydrogeological, biodiversity and cultural context, the effectiveness of these conditions is speculative. The conditions in the Singleton Water Licence require the preparation of

²⁴ Section 7 of the 2011 Western Davenport Water Allocation Plan, page 20.

²⁵ Section 8.4.1 of WDWAP, page 49.

²⁶ Section 9.1 of WDWAP, page 55.

²⁷ Paragraph 53 of the Statement of Decision.

a map and spatial data of groundwater dependent ecosystems²⁸ and development of a monitoring program²⁹. However, such conditions do not specify what data is required to be collected, in which location and what frequency, to improve confidence in the Groundwater Model.

29. An adaptive management framework is an ineffective framework when there is insufficient understanding of the risks that a water licence poses and insufficient understanding of the uncertainty in the modelling. To be effective, an adaptive management framework needs a strong understanding of the water resource, biodiversity and cultural values of the GDEs and potential environmental impacts on GDEs. This understanding does not currently exist for the Singleton Water Licence and it is unclear if investigations proposed as part of the Conditions Precedent in the Singleton Water Licence will provide an appropriate level of understanding. Baseline monitoring of GDEs (GDE condition verses local water levels and quality) should be required for 5 to 10 years to understand the environmental and cultural linkages with GDEs in sufficient detail to develop strong management criteria and separate drawdown impacts from natural variability.
30. Given the acknowledged uncertainty underlying the Groundwater Model, the grant of a water licence which comprises nearly 50% of the estimated sustainable yield of the Central Plains Management Zone which was allocated for consumptive uses, renders this a high risk decision by the Water Controller.
31. The Water Controller has a duty under section 34 of the Water Act to ensure as far as possible that a continuous program for the assessment of water resources of the Territory is carried out, including the investigation, collection, collation and analysis of data concerning the occurrence, volume, flow, characteristics, quality, flood potential and use of water resources. The WDWAP identified further work to be done and much of it should have been done by now. If it has not been done, the Water Controller has failed to carry out her duty in section 34 of the Water Act. If it has been done, it should have been disclosed in advance of any decision being made and the failure to do so is a denial of procedural fairness.

D. GROUND 3 – LACK OF PROTECTION OF CULTURAL VALUES IN WESTERN DAVENPORT DISTRICT

Ground 3: The Water Controller Decision fails to take into account the impact that the Singleton Water Licence will have on Aboriginal cultural values.

32. One of the objectives of the WDWAP is to protect Aboriginal cultural values associated with water³⁰.
33. Water is fundamentally important to traditional Aboriginal owners and native title holders of the Western Davenport District and Aboriginal people who live in the Western Davenport District. Aboriginal people have a strong connection to country and a dynamic relationship with water which includes social, cultural and environmental components.
34. All water sources such as soakages, waterholes, rock holes, springs and rivers play a major role in the social, cultural, spiritual and customary values of traditional Aboriginal owners and native title holders of the Western Davenport District. The significance of water is not limited to surface water and GDEs as it is found throughout the country and

²⁸ Condition CP5 in Singleton Water Licence

²⁹ Condition CP8 in Singleton Water Licence

³⁰ Section 1 of WDWAP, page 6.

in all living things.³¹ Water availability also affects many activities like hunting and harvesting for bush tucker, bush medicine, tool and craft making.³²

35. Section 8.2.2 of the WDWAP states that:

“Groundwater modelling (based on the cumulative consideration of all approved extraction) should be undertaken to determine if proposed groundwater extraction will unacceptably impact on groundwater dependent Aboriginal cultural values. The proposed extraction should not result in a change to groundwater conditions that would result in the loss or decline of cultural values, as demonstrated through modelling.”

36. Section 8.4.1 specifies work required to be completed to ensure the protection of Aboriginal cultural values in the Western Davenport District. This includes mapping and documenting water dependent cultural values³³.

37. The Water Controller is required to consider whether Fortune Agribusiness has demonstrated a commitment to protect cultural values from the impacts of groundwater extraction applications³⁴.

38. In her statement of decision, the Water Controller did not address:

- a) how the Singleton Water Licence would not result in a change of groundwater conditions that would result in the loss or decline of cultural values in the Western Davenport District; and
- b) the commitments (if any) given by Fortune Agribusiness to protect cultural values in the Western Davenport District.

39. The Water Controller again claims that the conditions that she imposed³⁵ would suffice to address *“the full extent of cultural values and practices and their water requirements and responses to increased extraction”*³⁶.

40. Fortune Agribusiness is required to *“produce a map (and spatial data), verified through suitable on-ground surveys of groundwater dependent ecosystems in each landform on Singleton Station in the Aeolian sandplain and alluvial plain areas shown in Figure 7.2 provided in Attachment A.”*³⁷ However, the Water Controller does not require Fortune Agribusiness to consider the cultural values of GDEs in preparing such a map and ensuring that measures are in place to protect such cultural values.

41. The drawdown area for the Singleton Water Station extends well beyond the Singleton Station³⁸ and the Fortune Report also recognises that the Singleton Water Licence may impact on GDES in the Central Plain Management Zone³⁹. Yet, the Water Controller does not require Fortune Agribusiness to produce a map of the GDEs of the drawdown area and assess the cultural values of the GDEs in the drawdown area. This must be required of Fortune Agribusiness, *before* any licence is granted.

42. CLC has not been provided a copy of the authority certificate which Fortune Agribusiness obtained from Aboriginal Areas Protection Authority. However, as

³¹ Section 5.2.2 of WDWAP, page 28.

³² Section 5.2.2 of WDWAP, page 28.

³³ Section 8.4.1 of WDWAP, page 50.

³⁴ Section 8.2.2 of WDWAP, page 43.

³⁵ See paragraph 53 of the Statement of Decision

³⁶ Paragraph 51 of the Statement of Decision

³⁷ CP5(a) of the Singleton Water Licence

³⁸ See pages 23 to 31 of the Summary Report

³⁹ Paragraph 101 of the Statement of Decision.

indicated in the Summary Report for the Singleton Horticulture Project prepared by Fortune Agribusiness dated August 2020 (**Summary Report**), the subject land in the authority certificate does not cover the drawdown area of the Singleton Water Licence⁴⁰. It does not even cover the drawdown area of the Singleton Water Licence which is in Singleton Station. Given the limited subject land of the authority certificate, the authority certificate will be unable to protect cultural values as required under the WDWAP and there could be a substantial risk of damage to sacred sites in the drawdown area which is within the vicinity of the subject land.

E. GROUND 4 – GUIDELINE INCONSISTENT WITH THE WDWAP

Ground 4: The Guideline is inconsistent with the objectives of the WDWAP and the Water Controller should not have relied on the Guideline.

43. In making her decision, the Water Controller considered and relied on the Guideline⁴¹. The Guideline was not subject to public consultation including consultation with the Western Davenport Water Advisory Committee.
44. The Guideline specifies that 70% of the current extent of the GDEs in the Western Davenport District should be protected from negative impact⁴² (**70% Threshold**). This means that 30% of the current extent of GDEs ***do not need to be protected from negative impact***.
45. One of the objectives of the WDWAP is to meet the environmental water requirements (**EWRs**) of water dependent ecosystems and detrimental impacts to water dependent ecosystems as a consequence of consumptive water use will be avoided as far as possible.⁴³
46. Section 22B(4) of the Water Act provides that “*water resource management in a water control district is to be in accordance with the water allocation plan declared in respect of the district*”.
47. The Guideline, which allows a potential 30% negative impact on GDEs, is inconsistent with the objective of the WDWAP to avoid detrimental impacts on water dependent ecosystems as far as possible. Given such inconsistency and the requirement under section 22B(4) of the Water Act that water resource management is in accordance with the declared water allocation plan, the Water Controller should not have relied on the Guideline in making the Water Controller Decision. Although the Water Controller claims that she is able to rely on the Guideline as it “*constitutes new scientific knowledge*”⁴⁴ (and this is disputed by CLC in Ground 5 below), the Water Controller fails to explain how her decision that foresees a potential 30% negative impact on GDEs meets the objective of the WDWAP to avoid detrimental impact to water dependent ecosystems as far as possible.

F. GROUND 5 - THRESHOLDS IN GUIDELINE ARBITRARY

Ground 5: The thresholds in the Guideline are arbitrary and the Water Controller fails to address the arbitrary nature of these thresholds in the way that she made the Water Controller Decision.

⁴⁰ See pages 23 to 26 and 28 to 31 of the Summary Report

⁴¹ Paragraphs 46 and 95 of the Statement of Decision

⁴² Page 8 of the Guideline

⁴³ Section 3 of the WDWAP, page 16

⁴⁴ Paragraphs 46 and 95 of the Statement of Decision

48. The Guideline recognises that there is limited scientific evidence to confidently set this threshold for Australian Arid zones specifically⁴⁵ and fails to specify the basis for the 70% Threshold. Without providing any basis, the authors of the Guideline, which was approved by the Chief Executive Officer of the Department of Environment and Natural Resources, who is also the Water Controller, has arbitrarily set this threshold without any reasonable grounds.
49. Furthermore, until more work is done to rank the biodiversity and cultural values of the various GDEs in the Western Davenport District, and particularly GDEs impacted by the Singleton Water Licence, there is a possibility that amongst the 30% of GDEs which are impacted, there are important cultural sites or sites of high biodiversity value. The Guideline also provides that *“additional consideration may need to be given to minimising the impact of groundwater extraction on sites or areas specifically identified as having important cultural values.”*⁴⁶
50. The Water Controller has failed to address the lack of scientific basis underlying the 70% Threshold and has mechanically applied the 70% Threshold. By mechanically applying the 70% Threshold without undertaking the necessary work to rank the biodiversity and cultural values of various GDEs, the Water Controller has failed properly to consider if the Singleton Water Licence will minimise the impact of that licence on sites with important cultural and biodiversity values.

G. GROUND 6 – NO CONSIDERATION OF AQUATIC GDES

Ground 6: The authors of the WDWAP fail to assess the risks to aquatic GDEs in the Western Davenport District. The risks to the aquatic GDEs have not been considered in the Guideline, the Fortune Report and the Water Controller Decision.

51. There is a major gap in the allocation planning and impact assessment in the WDWAP as aquatic GDEs have not been included.
52. According to the attached maps in Annexure A, which are extracted from the Bureau of Metrology GDE atlas, there are numerous sites with potential to contain aquatic GDEs. Given the proximity of these sites to Singleton Station, there is a possibility of the sites being impacted by the Singleton Water Licence.
53. Aquatic GDEs, particularly wetlands, springs and soakages, are typically those with the greatest sensitivity to drawdown. These are often the sites of greatest biodiversity and highest cultural value. The Fortune Report, which is a report considered by the Water Controller⁴⁷, fails to assess the impact of Singleton Water Licence on aquatic GDEs. The Guideline fails to contain any criteria for aquatic GDEs. The Water Controller also fails to consider the impact of the Singleton Water Licence on aquatic GDEs in the Western Davenport District in making the Water Controller Decision.
54. Aquatic GDEs are much more sensitive to drawdown than terrestrial vegetation GDEs, and the drawdown criteria proposed for the GDEs do not incorporate the more stringent drawdown criteria appropriate for aquatic GDEs. In some cases, any change in groundwater levels can “detach” the water table from these aquatic GDEs which will have serious impacts to aquatic fauna in particular. This could cause species to become locally or even regionally extinct. Rare and endangered species may be utilising these systems for resources and/or habitat but this has not been assessed.

⁴⁵ Page 8 of the Guideline

⁴⁶ Page 9 of the Guideline

⁴⁷ Paragraph 46 of the Statement of Decision.

H. **GROUND 7 - LACK OF UNDERSTANDING OF REGION-SPECIFIC VEGETATION GDEs DRAWDOWN IMPACT CRITERIA**

Ground 7: The WDWAP and Guideline demonstrate a lack of understanding of region-specific vegetation GDEs and the use of criteria are not consistent with those used in other jurisdictions in Australia.

55. The WDWAP and Guideline demonstrate a lack of understanding of region-specific vegetation GDEs and the use of criteria are not consistent with those used in other jurisdictions in Australia.
56. In the WDWAP and Guideline, all GDE areas with a DGW of 10 metres or less are considered together with the same drawdown magnitude and rate impact criteria. Areas with considerably shallower DGW than 10 metres, especially those areas with DGW of less than 5 metres, will be more highly groundwater dependant and will require more stringent rate impact criteria.
57. The WDWAP and the Guideline refer to a report by P.G Cook and D. Eamus titled “*The Potential for Groundwater use by Vegetation in the Australian arid zone*” (2018a). Cook and Eamus referred to a study done on banksias in Western Australia for a period over 20 years (**Banksia WA study**). EWRs for terrestrial GDEs are presented based on the Banksia WA Study.
58. It is concerning that the Banksia WA study is referred to given that the Banksia WA study focussed on banksia woodlands on sandy soils (Gnangara Mound). The vegetation communities in the Western Davenport District do not contain these species and there are no similar soil types in Western Davenport District (with possibly the exception of the alluvial landform areas).
59. Given the limited application of the Banksia WA Study in determining the EWRs for the Western Davenport District, there are high levels of uncertainty about the criteria (namely rate and magnitude of drawdown criteria) and the impacts on the terrestrial vegetation GDEs in the WDWAP and the Guideline. EWRs specific to the vegetation community and soil type for the Western Davenport District need to be determined.
60. The banksia woodland criteria in the Banksia WA Study were developed based on 20 years of vegetation condition and groundwater level change information. This gives an indication of the research effort required to determine these criteria with any degree of rigor.
61. The Banksia WA study is seen as best practice with different drawdown rate and magnitude criteria for the following levels of DGW areas: 10 to 6 metres, 6 to 3 metres and less than 3 metres. The drawdown and rate of drawdown criteria become more stringent as the DGW decreases. There is no justification presented in the WDWAP and the Guideline for all GDEs with a depth to groundwater of 10 metres or less having the same drawdown impact criteria.

I. **GROUND 8- SINGLETON WATER LICENCE SHOULD NOT BE LONGER THAN 10 YEARS.**

Ground 8: The Water Controller should not have granted the Singleton Water Licence for a term more than 10 years given the uncertainty underlying the Groundwater Model and the potential impacts of granting the Singleton Water Licence.

62. Section 60(3) of the Water Act 1992 provides that a licence to take groundwater shall be granted for a period not exceeding 10 years. Section 60(4) provides:

“The Controller may, where in the opinion of the Minister there are special circumstances that justify so granting the licence, grant a licence for such period exceeding 10 years as is specified in the licence document.”

63. In her reasons, the Controller referred to the Minister of Environment having affirmed that in the Minister’s opinion there are special circumstances for granting a licence in excess of 10 years⁴⁸.

64. The Guideline: Special circumstances for water extraction licence terms up to 30 years (**30 Years Guideline**) notes a case for special circumstances may exist where *“there is sound scientific knowledge of the water resource from which the licence takes water”*⁴⁹ and *“the impacts of extraction have been or can be assessed with a high degree of certainty.”*⁵⁰ For the reasons given above under Grounds 2 to 7, particularly with the uncertainty underlying the Groundwater Model and the impact on cultural values in the Western Davenport District, these do not exist for the water extracted from the Western Davenport District.

J. GROUND 9- BIODIVERSITY SURVEYS UNDERTAKEN BY THE NORTHERN TERRITORY GOVERNMENT AND THREATENED SPECIES

Ground 9: The Water Controller fails to address the concerns raised by the CLC about the biodiversity surveys conducted by the Northern Territory Government which could have impacted on the assessment about the threatened species in the Western Davenport region.

65. In CLC’s previous submission in response to the Notice of Intention for the Singleton Water Licence, the CLC requested that the Northern Territory Government undertake further biodiversity surveys as the Northern Territory Government conducted baseline flora and fauna survey work during a prolonged very dry period which meant that the results from such surveys were likely to be incomplete and unrepresentative. CLC also requested that the Northern Territory Government conduct surveys that included Warrabri, Mungkarta and Karlantijpa South Aboriginal Land Trusts in the Western Davenport District to establish a more thorough baseline with greater coverage.

66. Such concerns were not addressed by the Water Controller in her Statement of Decision and the Water Controller also did not set out the basis of the advice that she received that *“there are no known threatened species in the Western Davenport region that are dependent on GDEs.”*⁵¹ The Water Controller’s assertion of there being no threatened species should not rest on surveys conducted in the context described in paragraph 65.

67. This is significant as CLC considers that all GDEs known to support significant populations of threatened species (including both flora and fauna species) should be protected from negative impact.

K. GROUND 10 – CONDITION CP6 DOES NOT PROTECT FROM SALINITY IMPACTS.

⁴⁸ Paragraph 120 of the Statement of Decision

⁴⁹ Paragraph 5.2.1 of the 30 Years Guideline, page 6.

⁵⁰ Paragraph 5.2.1 of the 30 Years Guideline, page 6.

⁵¹ Paragraph 105 of the Statement of Decision

Ground 10 - Condition CP6 in the Singleton Water Licence does not sufficiently address the elevated soil salinity risks recognised in the Statement of Decision.

68. The Water Controller notes that she has been advised that there is an elevated soil salinity risk associated with the Singleton Water Licence⁵² and given that the salts are likely to flush beyond the root zone, there is uncertainty as to how this could impact the underlying groundwater resource⁵³.
69. CLC submits that the condition CP6 in the Singleton Water Licence does not adequately address such risks. The assessment and report to be provided to the Water Controller must include “a discussion about the likelihood and extent of salinity impacts on the Land and Water Resource”. This is unnecessarily vague. A “discussion” does not suffice and that the Water Controller should require Fortune Agribusiness to conduct a detailed impact assessment if the study shows potential for elevated salt leaching from soils under irrigation. The assessment needs to consider irrigation return to the aquifer and potential for groundwater salinity increases and flushing during intense recharge events.
70. CLC also submits that such an assessment should be subject to independent peer review

L. DECISION SOUGHT FROM THE MINISTER

71. Based on the grounds set out above, the Water Controller should not have made the decision to grant the Singleton Water Licence.
72. CLC submits that the decision which should have been made by the Water Controller, in the first instance, is to ensure that the work set out in the WDWAP, including work to refine the Groundwater Model and to address the uncertainty in the Western Davenport District generally (see, for example, sections 7.4.5, 7.4.6 and 8.4.1) is completed before considering any application for a groundwater licence in the Western Davenport District, especially an application for a licence of such a significant volume comprising a substantial portion of the estimated sustainable yield. It is only once the work set out in the WDWAP and the additional work identified in paragraph 73 below are completed, that there will be certainty of sufficient understanding to manage the groundwater resource and environment in the Western Davenport District.
73. In addition to the work set out in the WDWAP, the following work should also be undertaken before any licence is granted to ensure that the objectives underlying the WDWAP are met:
- a) Ranking of relative importance of terrestrial vegetation GDEs based on biodiversity and cultural values. These studies need to cover:
 - (i) flora and fauna surveys; and
 - (ii) a relative biodiversity value ranking assessment.

The assessment and the surveys need to be linked to cultural value studies. Groundwater monitoring is also required at these sites, particularly sites with the highest biodiversity value and/or cultural value.
 - b) Assessment of the location, biodiversity and cultural value and EWRs of aquatic GDEs. As submitted in Ground 6 above, the risks to aquatic GDEs have not been

⁵² Paragraph 81 of the Statement of Decision

⁵³ Paragraph 83 of the Statement of Decision

considered in the WDWAP, the Guideline, Fortune Report and the Water Controller Decision.

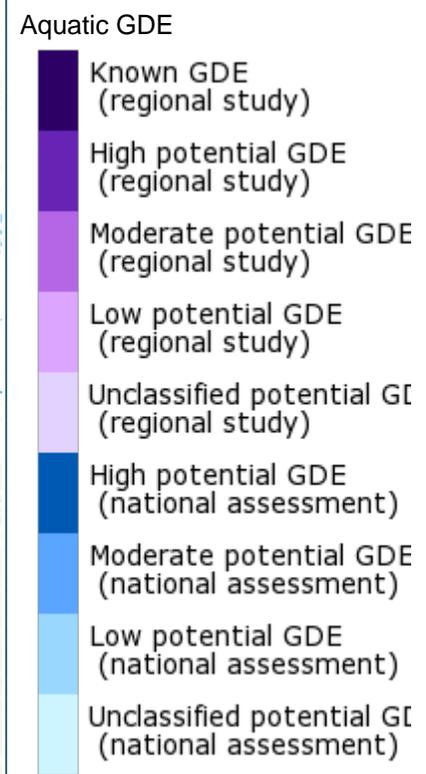
The sites identified in the maps in Annexure A should be selected at a minimum for biological, hydrological and hydrogeological investigation and other aquatic sites, particularly culturally significant aquatic sites, should also be included. Aquatic GDEs need to be surveyed for:

- (i) aquatic flora and fauna; and
- (ii) terrestrial flora and fauna;

These surveys need to be linked to cultural value studies. Once completed, a relative biodiversity and cultural value ranking assessment can be carried out and hydro-ecological linkages and degree of groundwater dependence determined. This will provide the requisite understanding of the ecological thresholds and EWRs required to manage these important sites.

- c) Hydrogeological investigations of GDEs at a local scale need to be integrated with the regional groundwater and geophysics investigation and the monitoring regime covering water levels and quality. This will require additional drilling. Monitoring and investigation of hydrology, hydrogeology and biology must be done at the same sites, at the same frequency and timing to ensure consistent overlap of these datasets. To determine the degree of groundwater dependence and impact risk to aquatic GDEs will also require individual aquatic GDE water and solute balances to be derived from monitoring data.
 - d) The completion of work under paragraphs 73(a) and (c) will allow determination of appropriate vegetation community specific EWRs while work completed under paragraphs 73(b) and (c) will allow determination of appropriate aquatic GDE EWRs the latter of which will likely vary on site specific basis.
 - e) Development of an improved groundwater model to assess impact on new and robust EWRs. Only once this is completed can development of a long-term integrated monitoring plan, with periodic review of GDE condition and EWRs, be appropriately robust and precautionary.
74. As indicated in Ground 9 above, the CLC also requires the Northern Territory Government to undertake further biodiversity surveys as the Northern Territory Government conducted baseline flora and fauna survey work during a prolonged very dry period which meant that the results from such surveys were likely to be incomplete and unrepresentative.
75. Accordingly, the CLC submits that the Minister should substitute the Water Controller Decision with the decision set out in paragraphs 72, 73 and 74 above.
76. If the Minister appoints a review panel to advise her under section 30(3)(b) of the Water Act, it is important that someone with hydrogeological expertise is appointed on the review panel given the grounds raised in the submissions above are required to be considered by someone with such expertise.
77. CLC also submits that while the ministerial review process is underway under the Water Act, all other remaining approval process relating to the Singleton Horticultural Project (and as set out in the Singleton Horticulture Project approvals map which is available online) be halted to ensure that this ministerial review process is not undermined in any way. No works should be undertaken, including vegetation clearing, until the ministerial review process is completed.

ANNEXURE A - MAPS



Data Source: Bureau of Meteorology, Geoscience Australia and State/Territory lead water agencies. Refer to metadata for further information: [Click here](#)

Australian Albers GDA94

