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2 June, 2025

Via email: water.licensing@nt.gov.au

To whom it may concern,

Objection to Paspaley Pastoral Company Pty. Ltd. groundwater extraction application

I am writing to object to Paspaley Pastoral Company Pty. Ltd., on NT Portion 2977 (Sturt Plateau)'s, application to increase its extraction volume to 9677.6 ML/yr for the purpose of agriculture.

Reasons for objection

I object for the following reasons, which are expanded on in this letter:

1. The proposed extraction volume of water is too large;
2. A water allocation plan for the area must be in place first;
3. Shortcomings that cannot be addressed without a water allocation plan:
    - 3.1. Limitations to and shortcomings in interpretation of hydrogeology & modelling;
    - 3.2. Impacts on groundwater dependent environments, National Parks and EPBC Act listed species;
    - 3.3. Risks to sacred sites and cultural values.
4. Other shortcomings in the application:
    - 4.1. The hydrogeological assessment is inadequate;
    - 4.2. The application is not supported by sufficient professional input and reports associated groundwater dependent ecosystem and cultural values associated;
    - 4.3. The adaptive management plan is inadequate and there is a lack of information by which to establish a baseline;
    - 4.4. There is no environmental management plan provided despite this being a major proposal on a vulnerable site. This is needed before any approvals should be granted. It is best assessed by the NT EPA via an public Environmental Impact Assessment;
    - 4.5. Failure to consult with anyone but neighbouring pastoralists.

Recommendations

1. **This application should be refused** - the applicant should be entitled to no more than a proportional allocation based on land area (2,400 ML/yr).

If a resubmitted application addressing the application's many shortcomings was received:

2. **No decision on an application should be made until a water allocation plan is in place** - this is a proposal of public interest and risk. It impacts major environmental and cultural values and other parties. Given the absence of a water allocation plan for the area and with new draconian limitations on third party review opportunities this needs to be a full and transparent process, providing opportunities for public input and proper consultation.
3. **An Environmental Impact Assessment by the EPA is required as the first port of call;** This is warranted given the profound significance of sensitive receptors (eg Giwining) and the other risks posed by this proposal, many of which are not properly considered via GWEL application (e.g. nutrient and pesticide pollution, weed impacts and clearing). This could also assess whether the proposed use of vital groundwater for cotton seed for cattle feed is in the public's interest.
4. **Consideration by the Federal Minister for the Environment for impacts on matters of National Significance.** This is necessary as this proposal impacts on matters of national environmental significance (Pig nose turtle and largetooth sawfish) and locations worthy of World and National Heritage listing.
5. **Technical review panel to be established.**
6. **Given the size of application and severe risks to Giwining, the Territory Coordinator's step in powers must not be used under any circumstance**s.
7. Cotton's primary purpose is as a fibre and represents a diversification from pastoral use. **This application should also be subject to a pastoral use diversification application.**

REASONS FOR OBJECTION

1. **The proposed extraction volume of water is too large**

   The application amount of 9,677.6 ML/yr is akin to the amount of water consumed by a town water supply for a town the size of Alice Springs. This is a huge commitment of water. It requires a full and thorough assessment taking into account regional values and community expectations.

2. **A water allocation plan for the area must be in place first.**

   The application draws from the Tindall Limestone Aquifer (TLA) within the Flora River flow system. The brief Dry River Station Technical Report 1/2020 states the land area within the flow system is approximately 15,000 sq km. This report and the GWEL advertisement state that 27.8 ML/yr is available. This is based upon 20% of recharge being available.

   I object to this value being considered available because the 27.8ML/yr is based upon an arbitrary definition of the aquifer management unit and recharge figures can be highly variable and contested. It should not have been included in the advertisement as this creates a false sense of there being low risk attached to the proposal.

Dry River Station Technical Report 1/2020 also estimates that ***2,400 ML/yr*** would be available based upon 20% of recharge within the lease being available. ***Prior to a water allocation plan being in place this should be the maximum available to Paspaley Pastoral Company Pty Ltd on NT Portion 2977.***

It is deeply inappropriate that entitlements of this size are granted based upon contingent allocations prior to a water allocation being in place for the Flora flow system. This repeats the historic failures in Katherine Tindall Limestone Aquifer, Oolloo Dolostone Aquifer and Mataranka, whereby extremely large entitlements were granted prior to water allocations being established. This has led to over-allocations in plans/or groundwater management zones, in areas of vital importance and Aboriginal Water Reserves becoming unavailable.

This is especially concerning in the context that the Flora River. It is a remarkable aquatic ecosystem of cultural and ecological significance. It is also the last large tributary of the Daly River that contributes to dry season groundwater flows that is not already subject to major groundwater extraction.

The NTG has had ample time to prepare a water allocation plan for the Flora River TLA flow system. There has also been general awareness of pressure for additional groundwater entitlements in the area, including from Paspaley Pastoral Company Pty. Ltd.. It is unacceptable that our environments, sacred water values and opportunities for local Aboriginal people should be put at risk to compensate for failure to gather data and develop water allocation plans in a timely way.

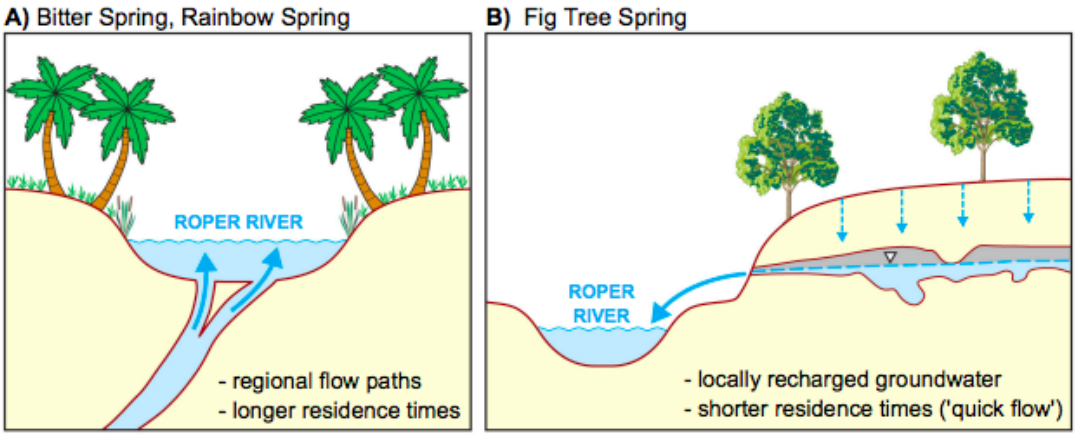
3. Shortcomings that cannot be addressed without a water allocation plan

3.1 Limitations to and shortcomings in interpretation of hydrogeology & modelling

It is well established that hydraulic conductivity is highly spatial variable within limestone aquifers like the Tindall Limestone. Most groundwater flow occurs within secondary porosity (fractures and karst features). This creates conditions for quick flow to environmental receptors and the likelihood that groundwater modelling will underestimate the extent and rate of impact in areas of high secondary porosity (see figure below) and miss localised variability.

The venting that is evident in river reaches where the TLA discharges and anecdotal stories of rapid transit of tracers from Kutta Kutta caves to Katherine River provide local examples of this.

It is also to be expected that high hydraulic conductivity areas and secondary porosity features are likely to be concentrated upon discharge areas like Flora River and springs along Mathison and Native Cat creek (hence their occurrence). The figure on p23 of the hydrogeological assessment in the GWEL application shows a generalised high transmissivity zone towards Flora River.



E.g. the figure[1] shows how secondary porosity, including cave systems act as conduits to rapidly collect and convey both local recharge and regional groundwater to river systems

Failure to report changes to discharges in dry years at a daily scale and inability to test these against field based thresholds

The role of groundwater in sustaining these permanent aquatic ecosystems through dry periods is what contributes to these ecosystems' uniqueness and cannot be emphasised enough.

The Dry River Station Technical Report 1/2020 fails to report modelled scenarios in sufficiently fine temporal detail to determine the impacts on environmental and cultural water requirements. It only reports the overall "Peak change in discharge" as a percentage amount per year.

To assess the impacts of extraction scenarios modelling must report predicted changes at a daily scale and in dry years.

Absence of understanding of ecosystem requirements and thresholds

The technical report also necessarily falls short by failing to consider whether cultural and environmental water levels and discharges will be met as these are not defined.

For these to be defined it needs the involvement of aquatic ecologists, and cultural experts to determine these thresholds.

3.2 Impacts on groundwater dependent environments, National Parks and EPBC Act listed species

3.2.1. Giwining Area

I am especially concerned about the impacts on the receiving Flora River (Giwining Nature reserve) and adjacent tributaries Native Cat Creek and Mathison Creek. As

[1] Lamontagne, S., Duvert, C., & Suckow, A. (2024). Quick Groundwater Flow to Tropical Savanna Springs (Mataranka, Northern Territory, Australia). Water (Switzerland), 16(23), 1-15. Article 3395. https://doi.org/10.3390/w16233395

well as Flora River's vast open water areas, springs and broad discharge features are evident throughout.

As noted, these aquatic groundwater dependent ecosystems rely on groundwater discharges that are sustained in the dry periods. ***As well as level and volumetric thresholds, discharges need also to be sufficient to ensure water remains of sufficient quality (ie not foster algal blooms).***

In addition to the abovementioned aquatic ecosystems being unique ecosystems in themselves and foundation of a park of high conservation value, these place also support EPBC listed species the Pig Nose turtle, *Carettochelys insculpta* (records shown on NRMaps) and likely the largetooth sawfish, *Pristis pristis*.

Carettochelys insculpta (pig-nosed turtle) is listed in the 'Vulnerable' category of the threatened species list under the Environment Protection and Biodiversity Conservation Act 1999 (Cwth) (EPBC Act). Its conservation advice[2] makes clear that the Flora River is habitat that is critical to the species' survival. This groundwater extraction proposal significantly risks two essential habitat characteristics listed in the conservation advice that the pig-nosed turtle relies upon:

1. Continuous low flow, with connectivity between sites to allow turtles to move along and between catchments.
2. Access to spring fed systems and reaches with well-developed riparian vegetation and instream structure.

In addition to these habitat characteristics I am concerned that reduced dry season discharges along with increasing nutrients from this proposal and general intensification of cattle activities and clearing in the catchment will create the conditions for eutrophication and algal blooms, in turn causing reductions in aquatic grasses and other food sources; and contributing to deoxygenation events.

Concerns such as this warrant referral of this proposal to the Federal Minister for the Environment and NTEPA.

3.2.2 Extent of aquatic and shallow terrestrial GDEs on Mathison and Native Cat creeks.

It should be noted that even relatively small declines in groundwater levels associated with extraction will lead to a decline in the upriver extent to which the tributaries and springs intersect the groundwater table. This could put existing plants and animals accessing shallow groundwater at risk. Given the relatively low gradient of these tributaries these changes could be significant.

3.2.3 Subterranean groundwater dependent ecosystems

The occurrence of stygofauna throughout the TLA is well established. In addition to risks to stygofauna associated within the drawdown cone around bores and pumping, I am concerned about water quality impacts associated with nutrients, salts and

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[2] http://www.environment.gov.au/biodiversity/threatened/species/pubs/1762-conservation-advice-16072024.pdf

pesticides introduced or concentrated by the proposal on stygofauna. This is a consideration best addressed by the NTEPA.

3.3 Risks to sacred sites and cultural water rights

3.3.1 Giwining and downstream

My own experience from visiting the Menngen community and reported statements by Wardaman people make absolutely clear the crucial importance of sustaining healthy flows and conditions in the Flora River and providing for downstream cultural water requirements. Neither Dry River Station Technical Report 1/2020, nor this GWEL application have reported any engagement with Wardaman people.

Literature identifies that Wardaman people '*ascribe the functioning of the Giwining/Flora spring system, which feeds the Daly River throughout the year, to a grasshopper lying under the ground 'pumping' the water out into the river (Jackson 2005a:140). BH explained that the Rainbow 'feeds the waterholes', keeping the water levels up or bringing them down (Field Notes 18 October 2006). Local Aboriginal law and myth also reflect the integration of inland and sea resources. Myths for sites for which Traditional Owners of the Daly are responsible also reinforce the interdependency of saltwater and freshwater creatures (Field Notes; Cooper and Jackson 2008)'* [3].

3.3.2 Cultural underground water rights on Dry River Station

As illustrated in the above passage it is clear that underground water is immensely important. Its occurrence and quality should be regarded as a sacred right in the same way as surface waters. It is deeply concerning that the consultation associated with the application is with the two neighbouring pastoralists only.

4. Other shortcomings in the application

4.1 The hydrogeological assessment is inadequate to simulate changes in discharge to the Flora River (acknowledged by author)***.*** The rationale for this is that the Department is better placed to do this. Unfortunately to date the Department has not reported changes in discharges to the Flora River in a relevant way to evaluate its impacts and has no thresholds for environmental and cultural impacts by which to evaluate acceptability.

4.2. The application is not supported by sufficient professional input and reports associated groundwater dependent ecosystems and cultural values

The GWEL application acknowledges the occurrence of GDEs however the supporting technical information is limited to a 'Hydrogeological Assessment', which provides very little detail on GDEs. It does not include input from aquatic ecologists and other professionals who could evaluate the impacts on ecological and cultural values. This deficiency is doubly problematic in the absence of a water allocation plan which would give consideration to these matters in a larger context.

4.3 The adaptive management plan is inadequate and there is a lack of

[3] https://onlinelibrary.wiley.com/doi/full/10.1002/ocea.5388

information by which to establish a baseline

The applicant states in 10.2 that its overarching management objective is to ensure water abstraction remains within the sustainable limit of the aquifer without social or environmental impact. However the monitoring plan shown in Table 16 proposes no monitoring or thresholds for any parameter that would help identify deleterious social or environmental impacts and trigger a response.

4.4 There is no environmental management plan despite this being a major proposal on a vulnerable site. This is needed before any approvals should be granted. It is best assessed by the NTEPA via an public Environmental Impact Assessment under the NT Environment Protection Act, 2019.

The application shows multiple drainage depressions within the cleared area and broadly drains towards a large seasonal wet area just to the south-west of the homestead. It is adjacent to the floodplain of the Dry River and contains multiple sinkholes. The total cleared area is for 816.2 ha which appears to be largely for cotton[4].

In short this is a vulnerable site. It risks offsite exports of and impacts from pesticides, fertilisers, weeds and sediments and drawdown impacts if any nearby low lying areas are groundwater dependent. If exports are via the overland flow these will enter the Dry River and the larger Daly system. If via the groundwater pathway exports enters the system via the Flora Tindall Limestone Aquifer drainage pathway.

These will have an cumulative impact as the adjacent properties also contain large clearing and cropping projects.

To avoid a piecemeal decision making on this application, this proposal needs to be considered first by the NT EPA to determine via a consultative process whether its impacts can be made environmentally acceptable. This is doubly important given there is not a water allocation plan in place for the area.

4.4 Failure to consult with anyone but neighbouring pastoralists.

Refer 3.3.2. This proposal impacts on sacred sites, cultural values and Native Title Agreements both on the site and remotely impacted areas, yet no evidence is provided that the impacted parties have even been advised of the proposal.

5. Recommendations

1. **This application should be refused** - the applicant should be entitled to no more than a proportional allocation based on land area (2,400 ML/yr).

If a resubmitted application addressing the applications many shortcomings was made:

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4 https://www.abc.net.au/news/2024-08-19/northern-territory-water-cotton-mataranka-springs-four-corners/104187666

2. **No decision on an application should be made until a water allocation plan is in place** - this is a proposal of public interest and risk. It impacts major environmental and cultural values and other parties Given the absence of a water allocation plan for the area and with draconian limitations on third party review opportunities this needs a full and transparent process, providing opportunities for public input and proper consultation.
3. **Environmental Impact Assessment by the EPA is required as the first port of call;** Given the profound significance of sensitive receptors (Giwining) and the other risks posed by this proposal, many of which are not properly considered via GWEL application (e.g. nutrient and pesticide pollution, weed impacts and clearing) the ***FIRST STEP should be an environmental impact assessment under the NT EPA Act 2019*.** This could also assess whether the proposed use of vital groundwater for cotton seed for cattle feed is in the public's interest.
4. **Consideration by the Federal Minister for the Environment for impacts on matters of National Significance** - As this proposal impacts on matters of national environmental significance (Pig nose turtle, largetooth sawfish and locations worthy of world and National Heritage listing) it should be referred to the Federal Minister for the Environment.
5. **Technical review panel to be established.**
6. **Given the size of application and severe risks to Giwining, the Territory Coordinator's step in powers must not be used under any circumstance**s.
7. Cotton's primary purpose is as a fibre and represents a diversification from pastoral use. **This application should also be subject to a pastoral use diversification application.**

Thank you for considering this submission. I would welcome the opportunity to meet to discuss.

Sincerely,

Adrian Tomlinson

Copies to:
NT EPA: Attention Dr Paul Vogel