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16 February 2026

To whom it may concern

SUBJECT: HYDROPEDOLOGY STATEMENT FOR THE PROPOSED MPONENG LOWER COMPARTMENT TAILINGS STORAGE FACILITY (TSF) PROJECT.

Dear Sir / Madam,

The Biodiversity Company has been commissioned to provide a hydropedology statement in support of the Water Use License (WUL) and amendment processes for the proposed Mponeng Lower Compartment Tailings Storage Facility (TSF) project. The proposed project involves recommencing deposition on the Mponeng Lower Compartment TSF (hereafter referred to as Mponeng TSF). The Mponeng TSF is currently not in operation and is used as a holding dam and partially as a landfill facility. Furthermore, the Mponeng TSF is situated near Carletonville, Merafong Local Municipality, West Rand District Municipality, Gauteng Province. This statement pertains to the relevance of hydropedology, and any associated risks towards the adjacent watercourses.

The assessed transects and previously site land type data (Land Type Survey Staff, 1972 - 2006) confirmed the hillslopes transects and the modelled conceptual models of delineated soil hydropedological groups resources in the catchment with the proposed Mponeng Lower Compartment Tailings Storage Facility (TSF) project, as presented in Figure 1. Four main hillslope hydropedological patterns were identified which are applicable to the catchment of influence with the proposed development (see Table 1). The majority of the slopes for the first and second distinctive hydropedological patterns are characterised by recharge (shallow or shallow) hydropedological types. These patterns occur from the crest to the midslope transecting to either a recharge (shallow or deep) at the valley bottom merging to a watercourse. The majority of the slopes for the third distinctive hydropedological patterns are characterised by recharge (shallow) and responsive (shallow) hydropedological types. These patterns occur from the crest to the lower midslope transecting to responsive (shallow) at the valley bottom merging to a watercourse. The fourth distinctive hydropedological patterns are characterised with recharge (shallow) and responsive (shallow and wet). These patterns occur from the crest to the midslope with a responsive (shallow) type transecting to recharge (shallow) at the midslope transecting to responsive (wet) in valley bottom section merging to the watercourse.

Several model exercises were undertaken to determine the catchment extent of the sub-basin for the wetlands (Figure 3) associated with the project area. These models indicate minimal impacts are expected as most of the proposed infrastructure exists. The site is in a land type commonly associated with shallow recharge hydropedological soils groups (Mispah), recharge (deep) hydropedological types (Carolina), responsive shallow hydropedological types (Witbank) and responsive saturated hydropedological types (Stilfontein) see Figure 3 and Table 1. It is worth considering the source of water associated with the moisture content within the watercourse.

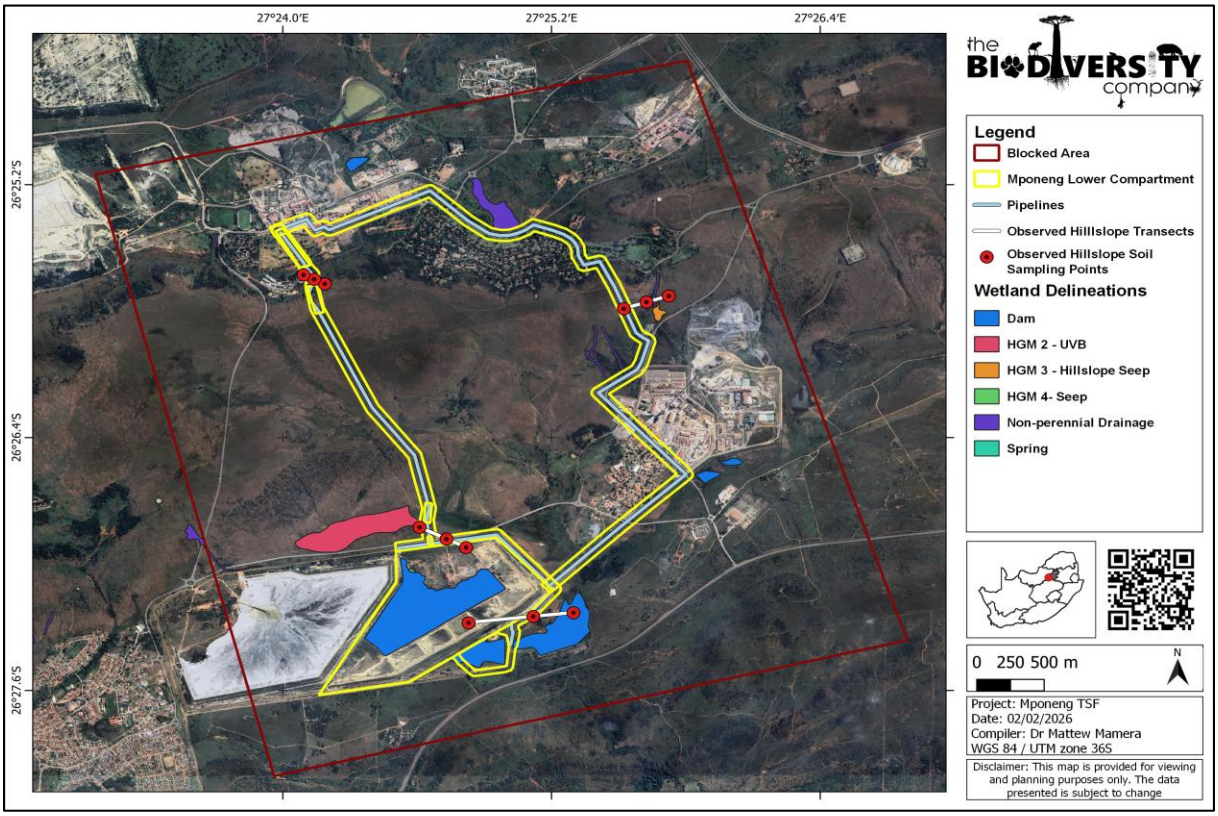


Figure 1 **The identified wetlands in relation to the proposed.**

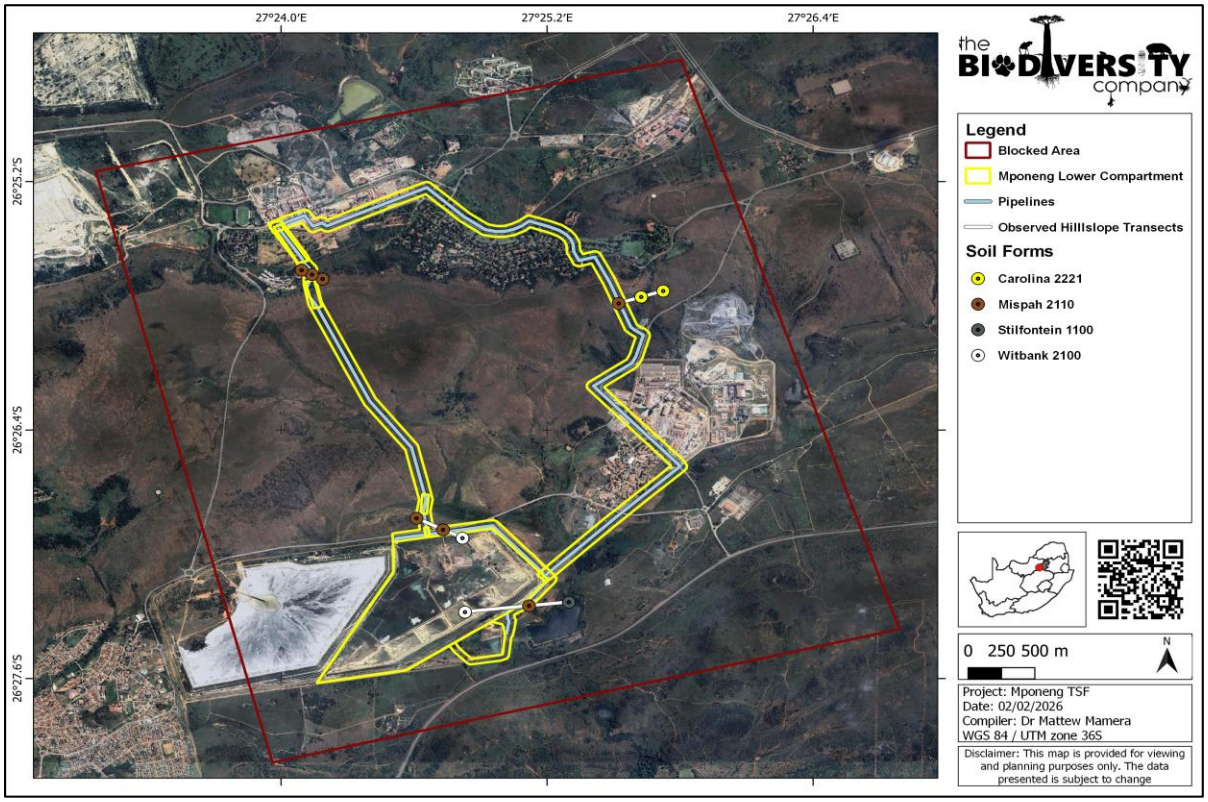
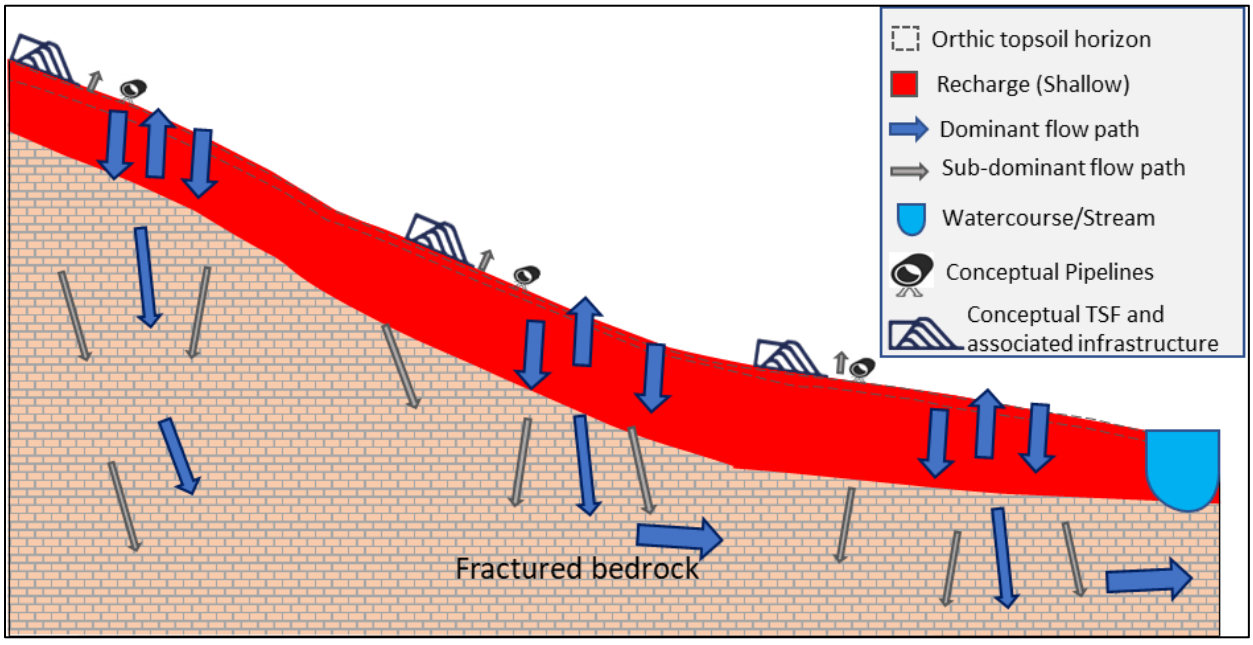
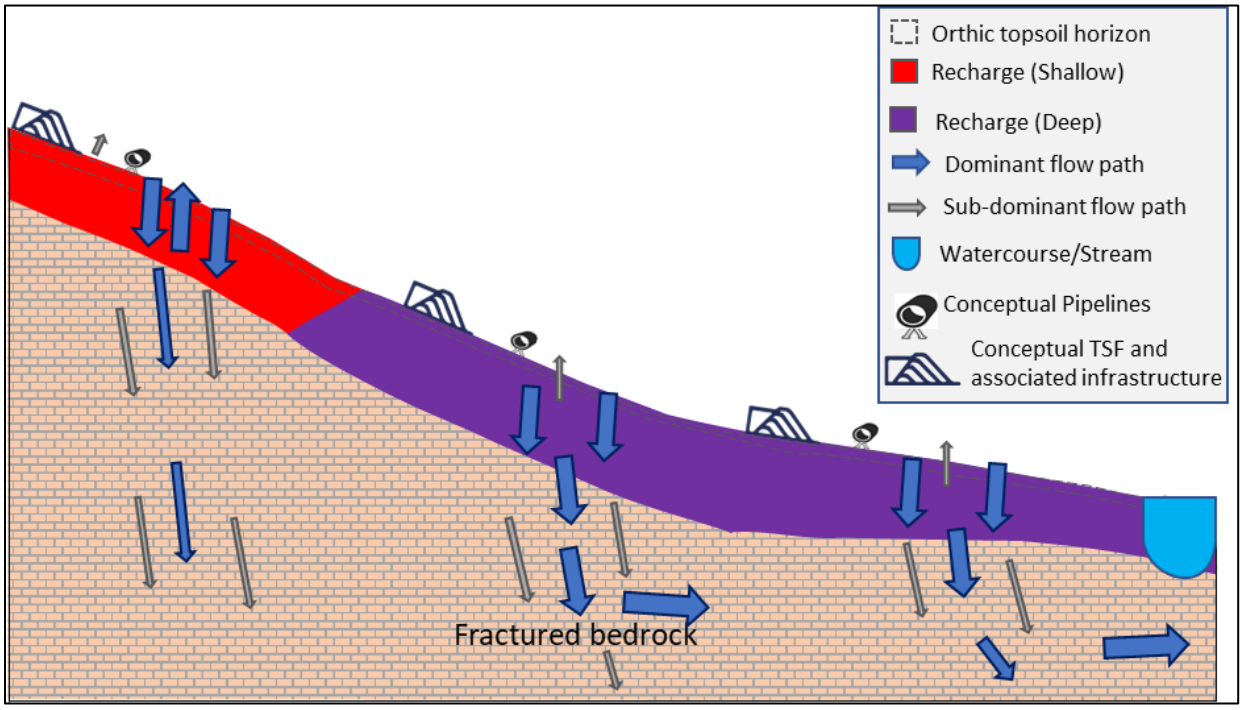


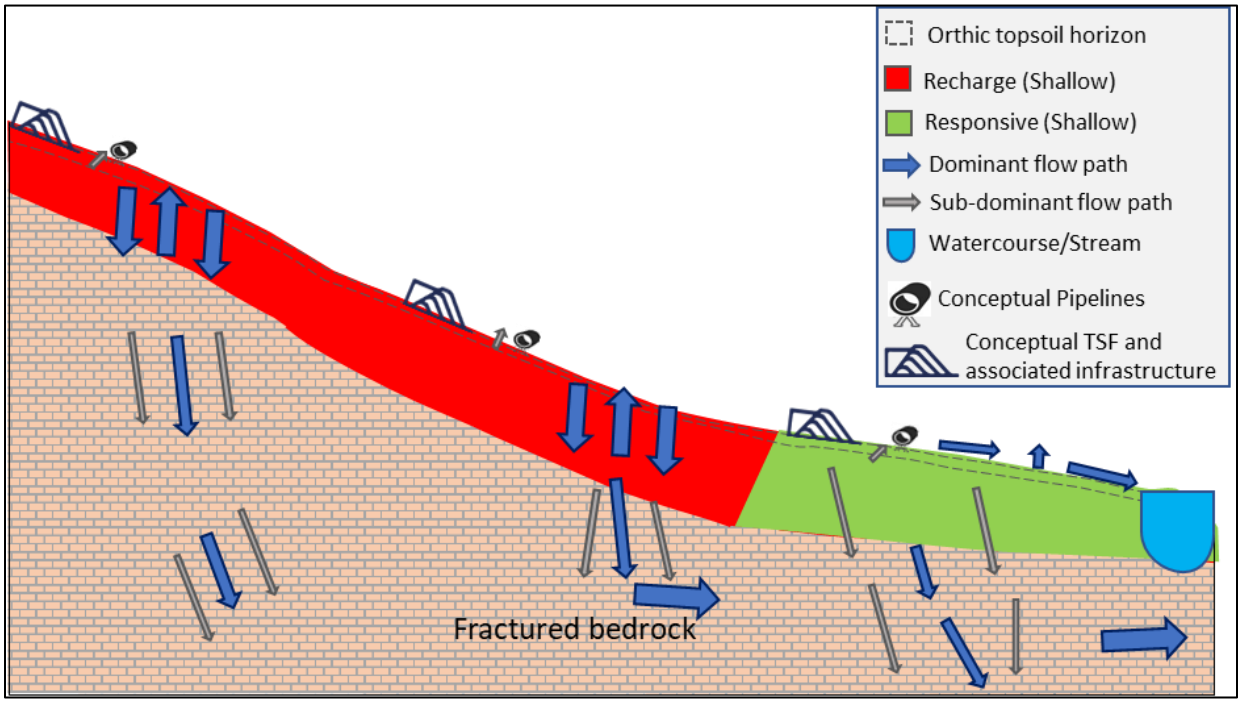
Figure 2 **The assessed hillslope transects hydropedological patterns regarding the Mponeng Lower Compartment Tailings Storage Facility (TSF) Project.**

Table 1 Hydropedological patterns for the Mponeng Lower Compartment Tailings Storage Facility (TSF) Project.

Terrain Morphological Unit (TMU)							
1&2		3		4		5	
Soil form	Hydroped	Soil form	Hydroped	Soil form	Hydroped	Soil form	Hydroped
Mispah 2210	Recharge (Shallow)	Mispah 2210	Recharge (Shallow)	Mispah 2210	Recharge (Shallow)	Mispah 2210	Recharge (Shallow)
Mispah 2210	Recharge (Shallow)	Carolina 2220	Recharge (Deep)	Carolina 2220	Recharge (Deep)	Carolina 2220	Recharge (Deep)
Witbank 2100	Responsive (Shallow)	Mispah 2210	Recharge (Shallow)	Mispah 2210	Recharge (Shallow)	Stilfontein 1100	Responsive (Wet)
Mispah 2210	Recharge (Shallow)	Mispah 2210	Recharge (Shallow)	Mispah 2210	Recharge (Shallow)	Witbank 2100	Responsive (Shallow)




Orthic topsoil horizon
Recharge (Shallow)
Recharge (Deep)
Dominant flow path
Sub-dominant flow path
Watercourse/Stream
Conceptual Pipelines
Conceptual TSF and associated infrastructure
Fractured bedrock


Orthic topsoil horizon
Recharge (Shallow)
Responsive (Shallow)
Dominant flow path
Sub-dominant flow path
Watercourse/Stream
Conceptual Pipelines
Conceptual TSF and associated infrastructure
Fractured bedrock

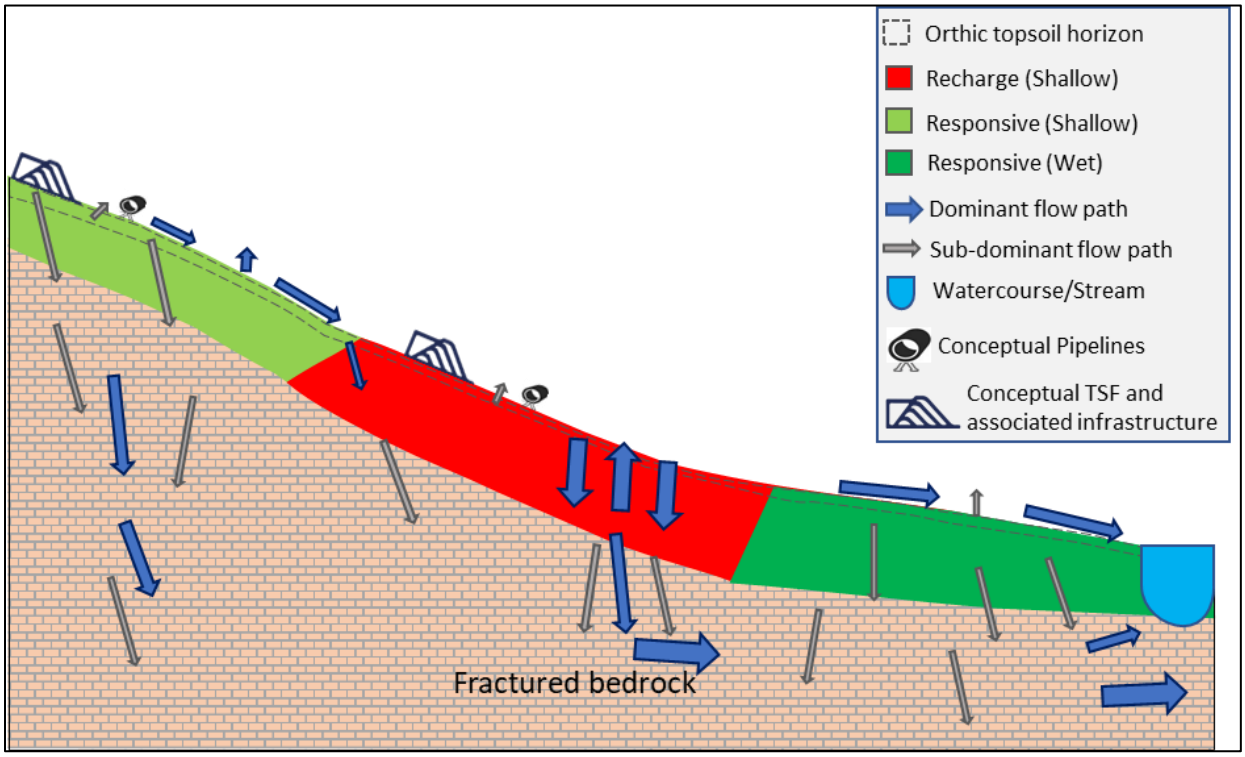


Figure 3 The Conceptual hydropedological flows after the Mponeng Lower Compartment Tailings Storage Facility (TSF) project.

The reach of the water resources adjacent to the proposed Mponeng Lower Compartment Tailings Storage Facility (TSF) project and associated infrastructure derives most water flows from the catchments north-east and south east, which are characterised with recharge (Shallow and deep). This indicates that surface and also subsurface recharge flows are predominantly responsible for the level of moisture in the watercourses. Commencement of activities to re-deposit for the project will have an acceptable impact on the recharge and lateral soils in proximity to the site`s catchment as dominant vertical and sub-dominant lateral flows towards the water table recharge stores (shallow, slow and deep recharge) will be minimally impeded see Figure *3*. Limited impacts can also be expected where the existing upgrades of the pipeline intercept the hillslopes with some lateral flows and responsive shallow. Flow impediments due to impermeable layers can occur promoting surface return flows. Usually, flow changes in the hillslopes will respond to vertical flow paths still recharging the catchment water stores sufficiently. It is however worth noting that, even though the impact is minimal, due to the presences of lateral flows from recharge (shallow) soils at the soil rock interface (Mispah soil form) associated with the project area should also be properly managed. This can minimise surface return flows or drainage problems which commonly promote loss of water as surface run-off or evaporation demands increasing the total catchment deductible water losses. The areas with responsive wet (saturated) soils (i.e., Stilfontein soil forms) mostly associated with artificial saturation or natural wetlands in the project area will be avoided.

When comparing the size of the project area with that of the combined sub-basins responsible for providing moisture content to the wetland systems, it is clear that the potential worst-case scenario loss of moisture to the wetland is approximately < 4% of the total water regime on a catchment scale as these areas where previously developed and the existing pipelines. Therefore, when considering a percentage loss of total streamflow and groundwater recharges, negligible losses are expected, predominantly due to the fact that the bulk of the moisture and waterflows already originates well upstream of the project area and around the catchment.

The existing pipelines, currently contribute minimally to catchment hydrology through limited lateral seepage and episodic surface runoff during rainfall events, which are largely managed via engineered containment systems. These contributions are constrained by the dominant hydropedological setting, which is characterised by vertical recharge patterns through well-drained soils such as Mispah and Carolina. The

proposed pipeline upgrade is not anticipated to significantly alter this status. Catchment-scale modelling confirms that the overall impact on water regime stores is negligible, with potential losses accounting for < 1% of the total catchment water balance. Importantly, the TSF footprint expansion avoids responsive saturated zones, and the hydropedological flow regime, particularly vertical infiltration, remains largely intact. Consequently, the pipeline upgrades will also not materially affect the subsurface or surface water contributions to adjacent watercourses, provided that current seepage and stormwater controls are maintained.

Therefore, it is the specialist's opinion that the proposed Mponeng Lower Compartment Tailings Storage Facility (TSF) project and associated infrastructure will not result in a significant loss of total streamflow and groundwater recharge water regime stores. It is therefore recommended that the proposed activities proceed as planned and no further hydropedology assessments are necessary.

Regards,

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