777 Peridot Street
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16 March 2026

To whom it may concern

SUBJECT: HYDROPEDOLOGY STATEMENT FOR THE PROPOSED BOOYSENDAL SOUTH BATTERY ENERGY STORAGE SYSTEM (BESS) PROJECT

Dear Sir / Madam,

The Biodiversity Company has been commissioned to provide a hydropedology statement in support of the Water Use License (WUL) for the proposed Booysendal South Battery Energy Storage System (BESS) Project located on Portion 8 of Farm Sterkfontein No. 53, near Mashishing, within the Thaba Chweu Local Municipality, Ehlanzeni District Municipality in the Mpumalanga Province, South Africa. The BS BESS Project involves the construction, operation, and eventual decommissioning of a utility-scale, behind-the-meter battery energy storage facility with an installed capacity of up to 25 megawatts (MW) and an energy storage capacity of up to 50 megawatt-hours (MWh). The system will store electrical energy during periods of lower demand and release stored energy during peak demand periods or times of grid instability. The Project will be developed entirely within the existing BS mining footprint and will connect to established electrical infrastructure associated with the mine.

This statement addresses the relevance of hydropedology to the proposed Project and evaluates potential risks associated with soils and hydrological processes, with specific reference to adjacent watercourses. The assessed transects (see Table 1) and previous 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 BS BESS facilities Project, as presented in Figure 1. One (1) main hillslope hydropedological pattern was identified which is applicable to the catchment of influence with the proposed BS BESS development (see Table 1). The majority of the slopes for the distinctive hydropedological patterns are characterised by recharge (shallow) hydropedological types. These patterns occur from the crest to the valley bottom merging to a watercourse.

Several modelling exercises were undertaken to determine the catchment extent of the sub-basin (Denoted as the blocked area) for the wetlands (Figure 3) associated with the Project area. These models indicate minimal impacts are expected. The site is in a land type commonly associated with shallow recharge hydropedological soils groups (Mispah) see Figure 3 and Table 1. It is worth considering the source of water associated with the moisture content within the watercourse.

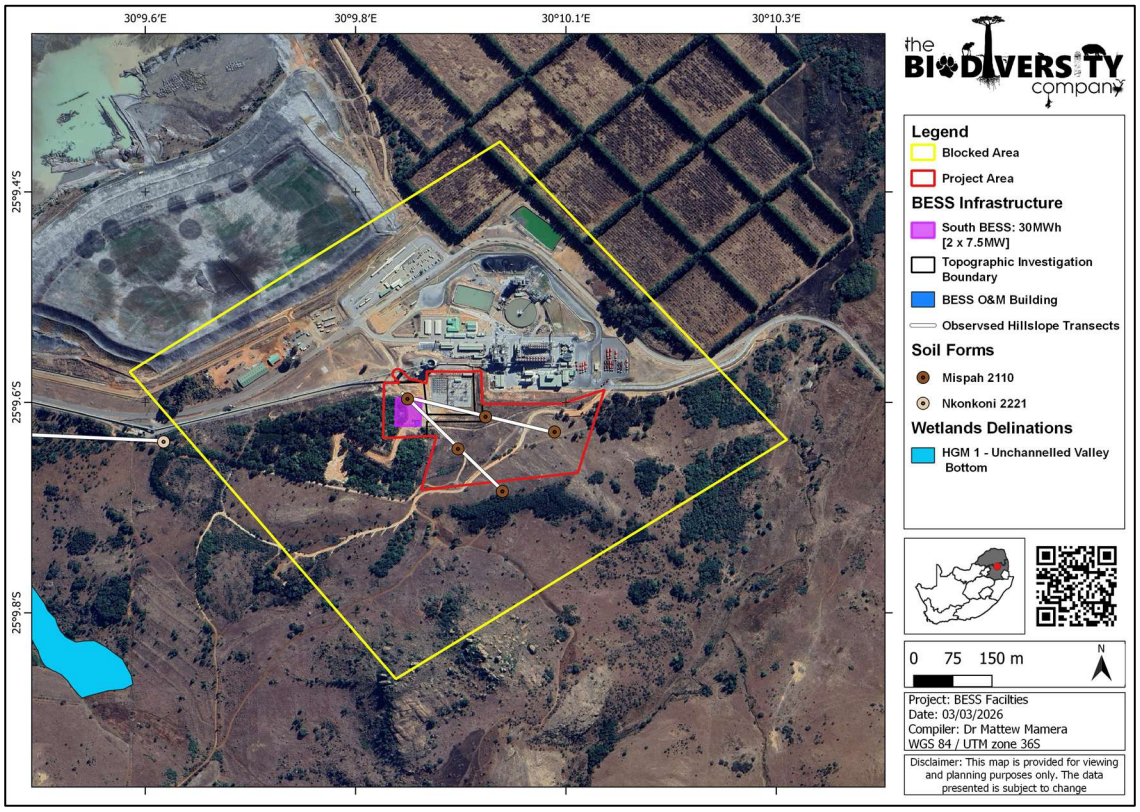

Figure 1 **The identified wetlands in relation to the proposed BS BESS Project.**

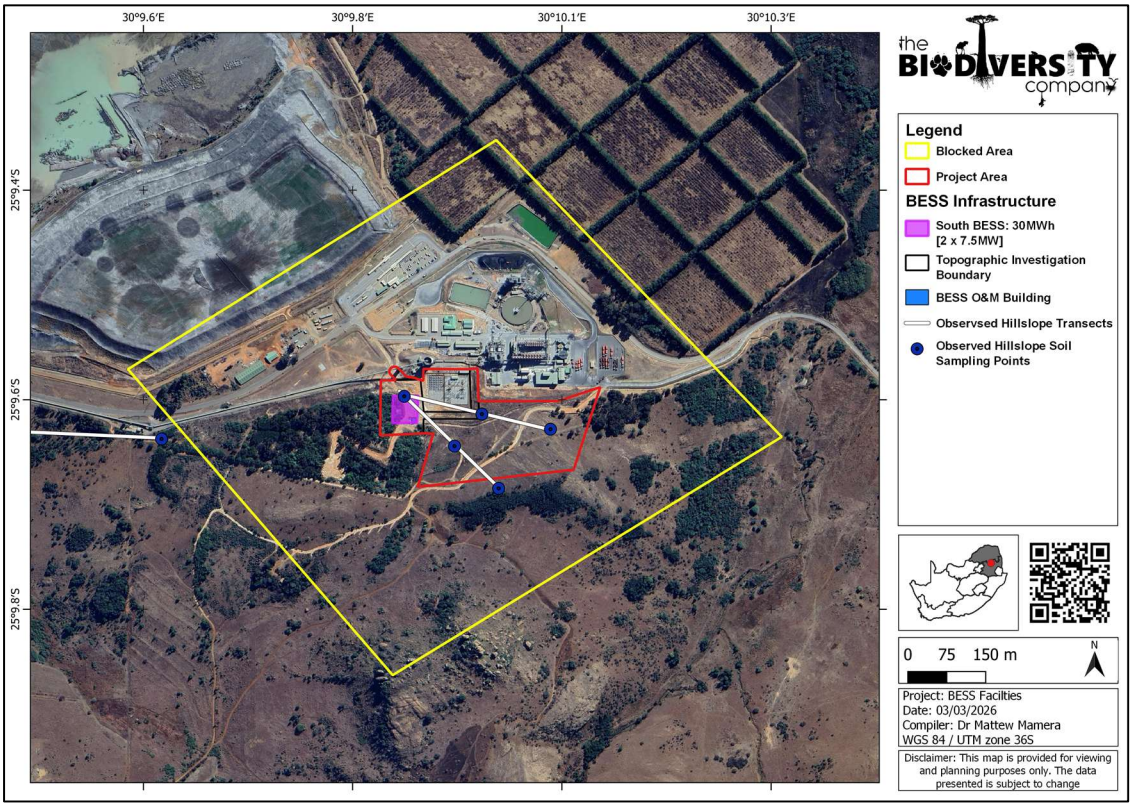

Figure 2 **The assessed hillslope transects hydropedological patterns regarding the BS BESS Project.**

Table 1 Hydropedological patterns for the BS BESS 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)

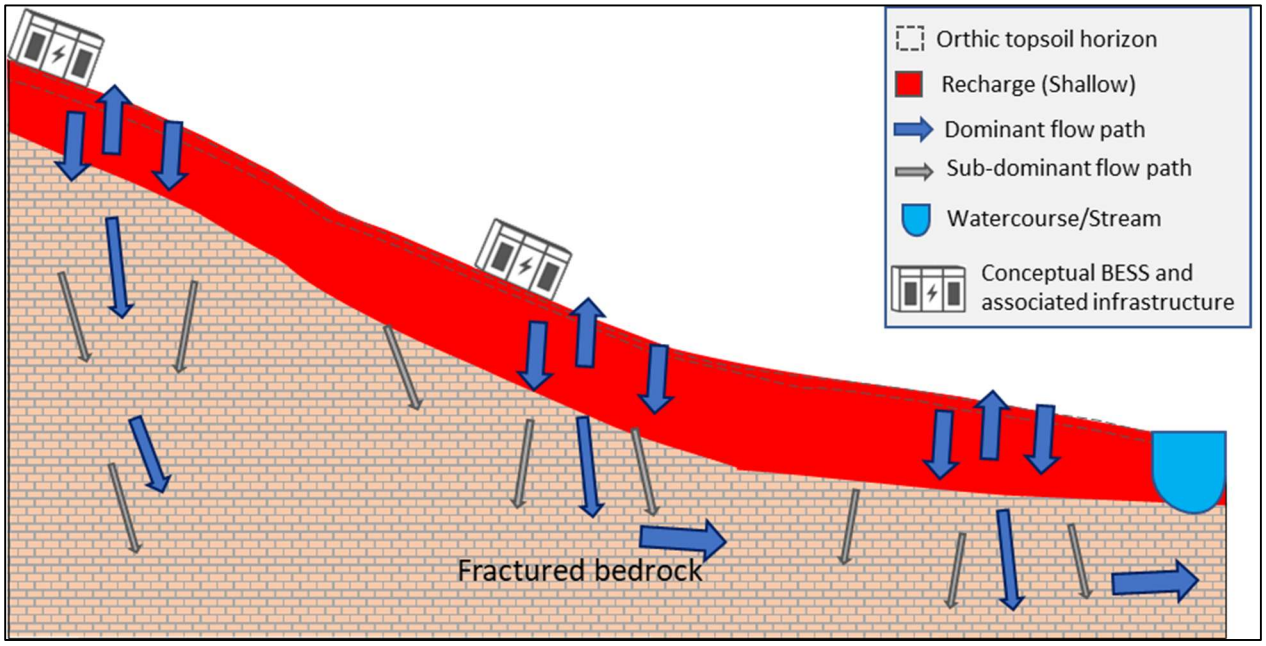

Figure 3 The Conceptual hydropedological flows after the BS BESS Project.

The reach of the water resources adjacent to the proposed BS BESS Project and associated infrastructure derive most water flows from the catchments north-west and north-east which are characterised with recharge (Shallow). This indicates that surface and also subsurface recharge flows are predominantly responsible for the level of moisture in the watercourses. Development of the BS BESS 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 recharge) will be minimally impeded see Figure 3. Limited impacts can also be expected where the infrastructure intercept the hillslopes with lateral flows. Flow impediments due to impermeable layers or cable trenches can occur promoting surface return flows most specifically for shallow lateral flows and in some areas with exposed rocky areas. 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 these shallow lateral flows associated with the Project area, such changes 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.

When comparing the size of the Project areas with that of the combined sub-basins responsible for providing moisture content to the unchanneled valley bottom wetland or watercourse systems like the Kafferskraalspruit river, it is clear that the potential worst-case scenario loss of moisture to the unchanneled valley bottom wetlands is approximately < 1% of the total water regime on a catchment scale. 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.

Therefore, it is the specialist's opinion that the proposed BS BESS 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 for the WUL authorization as losses to water regimes will be acceptable for the BS BESS Project. This hydropedology statement meets the requirement for a WUL authorization.

Regards,

Andrew Husted
Project Manager
SACNASP (*Pr. Sci Nat* 400213/11)

Dr Matthew Mamera
Soil Hydropedologist
SACNASP (116356)

DECLARATION

I, Matthew Mamera, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.

Matthew Mamera

Ecologist

The Biodiversity Company

March 2026

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DECLARATION

I, Andrew Husted, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.

Andrew Husted

Ecologist

The Biodiversity Company

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the BIODIVERSITY company

Matthew Mamera

Pr Sci Nat 116356 +27 785 772 668 matthew@thebiodiversitycompany.com

PROFILE SUMMARY

Environmental and ecological specialist with 10 years' consulting experience, with international working experience. Specialist experience in project exploration, mining, engineering, hydropower, renewable energy, and private sector developments. Project management of national and international multi-disciplinary projects. Provides specialist guidance, technical support, and facilitation for compliance with in-country legislative requirements and international lender standards. Registered Pr Sci Nat with the South African Council for Natural Scientific Professions and the Soil Science Society of South Africa.

PERSONAL INFO

Nationality: South African Permanent Residence

Date of birth: 31 October 1988

EXPERIENCE

- Environmental Impact Assessments (EIA)
- Soil taxonomic classification (SA forms and WRB groups)
- Soil Hydropedology, Agricultural and Land contamination assessments
- Soil Carbon credits

SKILLS

- ✓ Soil and Soil Hydropedology Assessments
- ✓ Agricultural, soil and water contamination Assessments
- ✓ Rehabilitation
- ✓ Monitoring & Management Plans

LANGUAGES

English – Proficient

Zulu, Xhosa, Ndebele, Sotho – Conversational

Afrikaner - Basic

Signed: Dr Matthew Mamera

ACADEMIC QUALIFICATIONS

University of the Free State (2021): Doctor of Philosophy (PhD) - Soil Science:
Title: *Assessing pollution and managing faecal sludge through biochar applications in Phuthaditjhaba, South Africa.*

University of the Fort Hare (2018): Master of Science (MSc) - Soil Science:
Title: *Pollution potential of on-site dry sanitation systems associated with the Mzimvubu Water Project, Eastern Cape, South Africa.*

University of the Fort Hare (2015): Bachelor of Science Honours *Cum laude* (Hons) – Soil Science

University of the Fort Hare (2001 - 2004): Bachelor of Science Agriculture in Soil Science. Majors: Soil Science.

PROFESSIONAL EXPERIENCE

Mar 2022 – Present	**The Biodiversity Company** Soils Unit Manager / Soil & Soil Hydropedology
Feb 2018 – Dec 2020	**University of the Free State** Junior Researcher, lecturer / Soil Science
Jan 2015 – Dec 2017	**University of Fort Hare** Junior Research, Tutor / Soil Science

INTERNATIONAL EXPERIENCE

Angola, Botswana, Namibia, Zambia, South Africa

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Andrew HUSTED

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PROFILE SUMMARY

Environmental and ecological specialist with 19 years' consulting experience, with international working experience. Specialist experience in project exploration, mining, engineering, hydropower, renewable energy, and private sector developments. Project management of national and international multi-disciplinary projects. Provides specialist guidance, technical support, and facilitation for compliance with in-country legislative requirements and international lender standards. Registered Pr Sci Nat with the South African Council for Natural Scientific Professions.

PERSONAL INFO

Nationality: South African

Date of birth: 19 April 1979

EXPERIENCE

Lender reporting requirements

Environmental, Social and Health Impact Assessments (ESHIA)

Environmental Management Programmes (EMP)

Ecology

SKILLS

- ✓ Critical Habitat Assessments
- ✓ Ecology
- ✓ Rehabilitation
- ✓ Monitoring & Management Plans

LANGUAGES

English – Proficient

Afrikaans – Conversational

German - Basic

Signed: Andrew Husted

ACADEMIC QUALIFICATIONS

University of Johannesburg (2009): MAGISTER SCIENTIAE (MSc) - Aquatic Health:
Title: *Aspects of the biology of the Bushveld Smallscale Yellowfish (Labeobarbus polylepis): Feeding biology and metal bioaccumulation in five populations.*

Rand Afrikaans University (RAU) (2004): BACCALAUREUS SCIENTIAE CUM HONORIBUS (Hons) – Zoology

Rand Afrikaans University (RAU) (2001 - 2004): BACCALAUREUS SCIENTIAE IN NATURAL AND ENVIRONMENTAL SCIENCES. Majors: Zoology and Botany.

PROFESSIONAL EXPERIENCE

Jan 2015 – Present	**The Biodiversity Company** Director / Ecology
Aug 2008 – Dec 2014	**Digby Wells Environmental** Ecologist / Manager
Jan 2007 – Jul 2008	**Econ@UJ** Technician / Freshwater Ecology

INTERNATIONAL EXPERIENCE

Angola, Armenia, Botswana, Cameroon, Democratic Republic of Congo, Ghana, Guyana, Ivory Coast, Lesotho, Liberia, Mali, Mauritius, Mozambique, Nigeria, Senegal, Serbia, Sierra Leone, South Africa
Tanzania