Technical Report for MMS General Authorisation for the Drilling of Exploration Boreholes for Resource Quantification on Portions 15 & the Remaining Extent of Portion 0 of the Farm Middeldrift 42 IS, near Middelburg (WU47590)

Prepared for

Seriti Power (Pty) Ltd

Document Detail

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Project Name:	Middelburg Mine Services (MMS) General Authorisation for the Drilling of Exploration Boreholes for Resource Quantification on Portions 15 & the Remaining Extent of Portion 0 of the Farm Middeldrift 42 IS, near Middelburg, Mpumalanga		
Client Name:	Seriti Power (Pty) Ltd		
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Document History

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0	Vumile Ribeiro	Lindokuhle Hlongwane	13 November 2025	

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Specialist Information

Title of Specialist Study:	Technical Report in Support of General Authorisation Application
Specialist Company Name:	Niara Environmental Consultants (Pty) Ltd
Specialist Name:	Vumile Ribeiro
Specialist Identity Number:	8605090831080
Specialist Qualifications:	• BSocSc. (Geography and Environmental Management) University of KwaZulu Natal (2007) • BSocSc. Hons. (Environmental Analysis and Management) University of Pretoria (2011) • MPhil. (Environmental Law) University of Pretoria (current)
Professional Affiliation/Registration:	• Environmental Assessment Practitioners Association of South Africa (EAPASA) • International Association of Impact Assessment South Africa (IAIASA) • Public Health Association of South Africa (PHASA) • Society of South African Geographers (SSAG) • National Association for Clean Air (NACA)
Physical Address:	Office 1, Palm Place Office Park, 22 Bram Fischer Drive, Linden, Johannesburg 2195
Postal Address:	Office 1, Palm Place Office Park, 22 Bram Fischer Drive, Linden, Johannesburg 2195
Telephone Number:	+27 66 526 5099
Cell phone Number:	+27 66 526 5099
E-mail:	vumile@niara.co.za

Declaration by the Specialist

I Vumile Ribeiro, as duly authorised representative of Niara Environmental Consultants (Pty) Ltd., hereby confirm my independence and declare that I:

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. "the Protocols") and in Government Notice No. 1150 of 30 October 2020.
- 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 48 and is punishable in terms of section 24F of the NEMA Act.

Signature of the Specialist:	V. Ribeiro
Name of Company:	Niara Environmental Consultants (Pty) Ltd
Date:	13 November 2025

Undertaking under Oath/Affirmation

I Vumile Ribeiro, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

Signature of the Specialist:	V. Ribeiro
Name of Company:	Niara Environmental Consultants (Pty) Ltd
Date:	13 November 2025

Executive Summary

Introduction

Middelburg Mine Services (MMS), owned and operated by Seriti Power (Pty) Ltd ("Seriti"), proposes to undertake a resource quantification drilling programme within the Albion North Section of the existing MMS Mining Right Area, located on Portions 15 and the Remaining Extent of Portion 0 of the farm Middeldrift 42 IS, near eMalahleni in the Mpumalanga Province. The programme entails the drilling of 22 exploration boreholes to improve confidence in existing coal resource estimates within an already authorised mining footprint.

The primary purpose of the drilling is to obtain geological and geotechnical information to refine the understanding of the quantity, quality, and distribution of coal resources and to inform long-term mine planning, operational safety and environmental management. The activity is of a limited duration, has a small physical footprint, and will be undertaken using standard exploration drilling rigs under controlled conditions and in accordance with Seriti's Environmental Management Standards and applicable legislative requirements.

Because certain boreholes are located within 500 m of delineated wetland systems and other surface water features, the proposed drilling is anticipated to trigger Section 21(c) and Section 21(i) water uses as defined under the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"). Seriti has therefore appointed Niara Environmental Consultants (Pty) Ltd ("Niara") as the independent Environmental Assessment Practitioner (EAP) to compile a General Authorisation (GA) application in terms of Section 39 of the NWA and to provide the Department of Water and Sanitation (DWS) with sufficient technical information to determine whether the activity may be authorised under the GA framework rather than a full Water Use Licence (WUL).

Methodology and Legislative Context

The technical assessment that underpins this GA application followed a structured methodology aligned with the NWA, Government Notice (GN) 509 of 2016 (GA for Section 21(c) and (i) water uses), relevant DWS guidelines, and the broader principles of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

Key components of the approach included:

- Water-use screening and legal applicability – Identification of water uses associated with the proposed drilling, with specific focus on Section 21(c) (impeding or diverting the flow of water in a watercourse) and Section 21(i) (altering the bed, banks, course or characteristics of a watercourse), and confirmation that the scale, nature and extent of the activity fall within the thresholds applicable to GA.
- Wetland delineation and baseline assessment – Field-based delineation and characterisation of wetlands using hydro-geomorphic (HGM) classification, supported by Present Ecological Status (PES) and Ecological Importance and Sensitivity (EIS) assessments to establish baseline condition and conservation value of watercourses potentially affected by the drilling programme.

- Risk assessment using the DWS Risk Assessment Matrix (RAM) – Application of the GN 509 RAM to evaluate potential impacts on water resource quality, hydrology, geomorphology and aquatic ecology during the construction (drilling) and rehabilitation phases. The RAM considered severity, spatial scale, duration, frequency, legal implications, detectability and resultant significance before and after mitigation.
- Development of a Water and Waste Management Framework and Environmental Management Plan (EMP) – Formulation of performance objectives, mitigation measures, monitoring requirements and rehabilitation protocols to ensure implementation of best practice and to reduce residual risks to acceptable levels.

The GA Technical Report is therefore intended to provide DWS with a defensible, integrated assessment of the proposed water uses within the context of the Upper Olifants Water Management Area and the local wetland network.

Baseline Environmental Setting

The project area forms part of Seriti's existing operational footprint associated with MMS and is locally referred to as the Albion Section. It lies within the Upper Olifants Water Management Area (WMA), specifically the B11G quaternary catchment, approximately 10 km north-west of eMalahleni. The nearest significant drainage feature is an unnamed non-perennial tributary of the Olifants River (Sub-Quaternary Reach B11G-01225). The site does not fall within a National Freshwater Ecosystem Priority Area (NFEPA).

Wetlands within the Albion North Resource Quantification Project Area comprise:

- HGM Unit 1 – Steenkoolspruit Riparian Zone
- HGM Units 2 and 4 – Hillslope seepage wetlands
- HGM Unit 3 – Channelled valley-bottom wetland

These systems occur within a landscape heavily influenced by past and ongoing coal mining, crop cultivation, access roads and associated infrastructure. PES assessment indicates that the Steenkoolspruit riparian zone and the channelled valley-bottom wetland are *Moderately Modified (PES-C)*, while the hillslope seepage wetlands range from *Largely Modified (PES-D)* to *Seriously Modified (PES-E)*, reflecting substantial historical disturbance and cumulative anthropogenic pressure.

All HGM units were assessed as having *Moderate Ecological Importance and Sensitivity (EIS)* – important at a local to provincial scale, contributing to biodiversity support and limited flow and water-quality regulation, but not typically highly sensitive to incremental, well-managed disturbances.

Importantly, none of the proposed resource-quantification boreholes are located within the channelled valley-bottom wetland (HGM 3); potential interactions are limited to activities within or near the riparian and seepage systems, subject to the mitigation hierarchy.

Risk Assessment and Significance of Impacts

The GN 509 RAM was applied to the construction (drilling) and rehabilitation phases, as no operational phase with ongoing infrastructure in the watercourse is proposed. Assessed aspects included vehicle access, temporary track creation, vegetation

clearing in the immediate drill areas, sump excavation, potential hydrocarbon spills, localised soil disturbance, and backfilling and rehabilitation of boreholes and sumps.

Pre-mitigation scores generally fell within the *Moderate* risk category, reflecting the sensitivity of wetland systems and the potential for short-term disturbance to hydrology and water quality if activities are poorly managed (e.g. unregulated vehicle access, unlined sumps, or unmanaged spills). For example, vehicle access to drilling positions was rated as Moderate significance prior to mitigation.

With the implementation of the proposed mitigation measures, including the use of existing tracks, strict control of access routes, lining of sumps, placement of drip trays under stationary vehicles and equipment, scheduling drilling during drier periods, and comprehensive environmental awareness training for contractors, all assessed risks were reduced to the *Low* category in terms of the DWS RAM.

Given the temporary nature of the activity, the small and localised footprint, the fact that no new permanent infrastructure will be established within wetland channels, and the effectiveness of the proposed mitigation and rehabilitation measures, the residual risk to water resources and wetland integrity is considered low and consistent with the risk profile envisaged under the GA framework in GN 509.

Management, Mitigation and Monitoring

A comprehensive Water and Waste Management philosophy and Environmental Management Plan (EMP) has been developed to guide implementation. Key elements include:

- Integrated water and waste management: Minimising water use, containing and recycling drilling water where practicable, lining sumps to prevent seepage, prohibiting servicing or refuelling of vehicles on-site, and ensuring appropriate disposal of drilling muds, contaminated soils and general waste.
- Access and site layout controls: Using existing disturbed areas and tracks wherever possible, avoiding wetland channels and saturated soils, aligning tracks with contours to reduce erosion risk, and limiting vegetation clearing to the immediate drill sites.
- Rehabilitation and borehole sealing: Backfilling and stabilising all sumps and disturbed areas, reinstating materials in their correct stratigraphic order, managing spoiled core responsibly, and sealing boreholes in accordance with the mine's standard operating procedures and environmental risk assessment requirements, including cement sealing up to 1 m from collar where underground mining may occur.
- Monitoring and reporting: Implementing water quality and wetland condition monitoring during and after drilling (as set out in the EMP), maintaining incident registers, and undertaking corrective action where non-conformances are observed.

These measures are designed to ensure that disturbances remain temporary and reversible, and that the wetlands' functional capacity is not materially compromised by the proposed drilling activities.

Conclusions and Recommendations

The assessment concludes that the proposed MMS Albion North exploration drilling programme:

- Is confined to an already disturbed coal mining and agricultural landscape within an authorised mining right area;
- Triggers Section 21(c) and (i) water uses, but only at a limited spatial scale and for a short duration;
- Interacts primarily with wetland systems that are already moderately to seriously modified, yet still of Moderate EIS, and does not introduce new permanent infrastructure into wetland channels; and
- Results in *Low residual risk* to water resources and wetland integrity when the proposed mitigation, rehabilitation and monitoring commitments are fully implemented.

On this basis, the proposed activity is considered to be of sufficiently low risk to qualify for authorisation under the General Authorisation provisions of the NWA, rather than necessitating a full Water Use Licence application, provided that DWS is satisfied that all GA conditions and GN 509 requirements are met.

It is therefore recommended that:

- DWS considers favourably the GA application for the MMS Albion North exploration drilling programme, subject to standard GA conditions and the specific mitigation, management and monitoring measures described in this Technical Report and the accompanying EMP; and
- Seriti ensures rigorous implementation of the EMP, ongoing environmental training and awareness for all personnel and contractors, and transparent reporting to regulatory authorities throughout the drilling and rehabilitation phases.

Subject to these commitments, no fatal flaws have been identified from a water resource and wetland risk perspective that would preclude the granting of a General Authorisation for the proposed exploration drilling activities.

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Glossary

Term	Definition
Channel	An open conduit with clearly defined margins that (i) continuously or periodically contains flowing water, or (ii) forms a connecting link between two water bodies.
Channelled Valley-Bottom Wetland	A mostly flat valley-bottom wetland dissected by, and typically elevated above, a channel. Dominant water inputs are usually from the channel (as surface flow overtopping the banks or as interflow) and from adjacent valley-side slopes (as overland flow or interflow). Water generally moves through the wetland as diffuse surface flow, with short-lived concentrated flows possible during flooding events (SANBI, 2009).
Corrective (Remedial) Action	A management response required to address an environmental issue that conflicts with the Environmental Management Plan (EMP). The need for corrective action may arise through monitoring, audits, or management review.
Culvert	An artificial, covered channel that allows water to pass underneath a road, railway, or embankment (Russel, 2009).
Discharge	The volume of water flowing through a stream per unit time, typically expressed in cubic metres per second (m^3/s) (Russel, 2009).
Erosion	The process by which the earth's surface is worn away through the action of wind, water, or other natural forces, involving the transport and deposition of soil and rock materials.
Flat	A near-level wetland area situated on a plain or bench, characterised by minimal relief and gradient. Water inputs are primarily from precipitation, except for coastal flats where groundwater may rise to the surface due to proximity to sea level (SANBI, 2009).
Floodplain Wetland	A mostly flat or gently sloping wetland area adjacent to a river, formed by alluvial processes and periodically inundated by floodwaters overtopping the channel banks (SANBI, 2009).
Gabion	A structure composed of wire mesh baskets filled with stones, used to prevent or repair erosion. Gabions are flexible, permeable, and allow water to filter through while supporting vegetation establishment (Russel, 2009).
Hillslope Seep	A wetland located on sloping land, dominated by the downward, colluvial movement of material. Water inputs are primarily from groundwater or precipitation entering from upslope, moving through the wetland as interflow or diffuse overland flow during rainfall events (SANBI, 2009).
Intervention	An engineered or ecological measure such as a weir, earthwork, or revegetation activity designed to achieve specific management or restoration objectives within a wetland (Russel, 2009).
Maintenance	The replacement, repair, or reconstruction of an existing structure within its original footprint, capacity, and function (Russel, 2009).

Term	Definition
Mitigation	Actions undertaken to minimise or reduce the environmental impact of a particular activity (Russel, 2009).
Rehabilitation	The process of reinstating ecological drivers (e.g. hydrological, geomorphological, and biological processes) within a wetland to restore its health and improve ecosystem services (Russel, 2009).
Reno Mattress	A thin, wire-mesh mattress filled with rock, typically 150–300 mm thick, used to protect soil from erosion caused by flowing water. The chosen thickness depends on water velocity and soil erodibility (Russel, 2009).
Sediment	Solid material, such as sand, silt, and clay, transported and deposited by moving water (Russel, 2009).
Silt Barrier	A temporary sediment-control structure (e.g. silt fence, hay bales, sandbags, or brush piles) installed to reduce sediment movement downslope and prevent erosion during construction or land disturbance.
Stone Pitching	The process of paving or armouring slopes, channels, or embankments using small or large stones to prevent erosion.
Unchannelled Valley-Bottom Wetland	A mostly flat valley-bottom wetland lacking a major channel and characterised by diffuse surface flows, even during rainfall events. Water inputs are typically from upstream dispersed flows, adjacent slopes, or groundwater (SANBI, 2009).
Valleyhead Seep	A gently sloping, concave wetland situated at the head of a drainage line, with water inputs mainly from subsurface flow and occasional diffuse overland flow during rainfall events. Water exits as concentrated surface flow where the seep transitions into a channel (SANBI, 2009).
Water System	Any system comprising dams, impoundments, canals, pipelines, or other infrastructure constructed for the retention, storage, or conveyance of water.
Weir	A fixed barrier built across a stream or river to raise the water level or measure discharge. Commonly constructed from concrete, stone masonry, or rock-filled gabions (Russel, 2009).
Wetland	Land transitional between terrestrial and aquatic systems, where the water table is at or near the surface or where the land is periodically covered by shallow water. Wetlands typically support vegetation adapted to saturated soil conditions (National Water Act, 1998).

List of Abbreviations and Acronyms

BPEO	Best Practical Environmental Option
DARDLEA	Department of Agriculture, Rural Development, Land and Environmental Affairs
DMR	Department of Mineral Resources
DWA	Department of Water Affairs
DWS	Department of Water and Sanitation
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
ESOP	Employee Share Ownership Programme
IGA	Integrated Water Use License Application
IWWMP	Integrated Water and Waste Management Plan
MAP	Mean Annual Precipitation
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MRA	Mining Right Application
NEMA	National Environmental Management Act, 1998 Act 107 of 1998
NFEPA	National Freshwater Ecosystem Priority Areas
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PES	Present Ecological State
SQR	Sub Quaternary Reach
WMA	Water Management Area
WARMS	Water User Registration Management Systems

1 Introduction

Seriti Power (Pty) Ltd ("Seriti") has appointed Niara Environmental Consultants (Pty) Ltd ("Niara") as the independent Environmental Assessment Practitioner (EAP) to compile a General Authorisation (GA) application in terms of the National Water Act, 1998 (Act No. 36 of 1998). The GA pertains to proposed exploration drilling activities within the Albion North Section of the existing Middelburg Mine Services (MMS) Mining Right Area, located near Middelburg in the Mpumalanga Province.

The drilling programme forms part of Seriti's ongoing geological evaluation and resource development initiative aimed at quantifying and improving confidence in coal resource estimates within already authorised mining areas. The proposed activity involves the drilling of 22 exploration boreholes, some of which are situated within 500 metres of wetland systems and other surface water features identified during preliminary site screening.

The purpose of the drilling is to obtain geological and geotechnical data that will assist in defining the quantity, quality, and distribution of coal resources across the project area. This information will contribute to a more accurate understanding of the subsurface stratigraphy, lithology, and structure, and will support long-term mine planning, operational safety, and environmental management.

The exploration programme represents a low-impact activity, with drilling operations to be conducted using standard exploration rigs under controlled conditions and in accordance with Seriti's Environmental Management Standards and relevant legal requirements.

The overall objectives of the proposed MMS drilling project are to:

- Resource Assessment: Quantify the volume, grade, and distribution of coal resources within the designated area.
- Geological Understanding: Enhance the geological model through analysis of core samples and subsurface data.
- Risk Mitigation: Identify potential geological constraints or hazards (e.g. unstable formations, igneous intrusions) that could influence future mine design or environmental performance.
- Regulatory Compliance: Ensure that all activities are conducted in accordance with local, national, and international best practice standards, including compliance with the National Water Act, NEMA, and other applicable legislation governing mineral exploration and environmental protection.

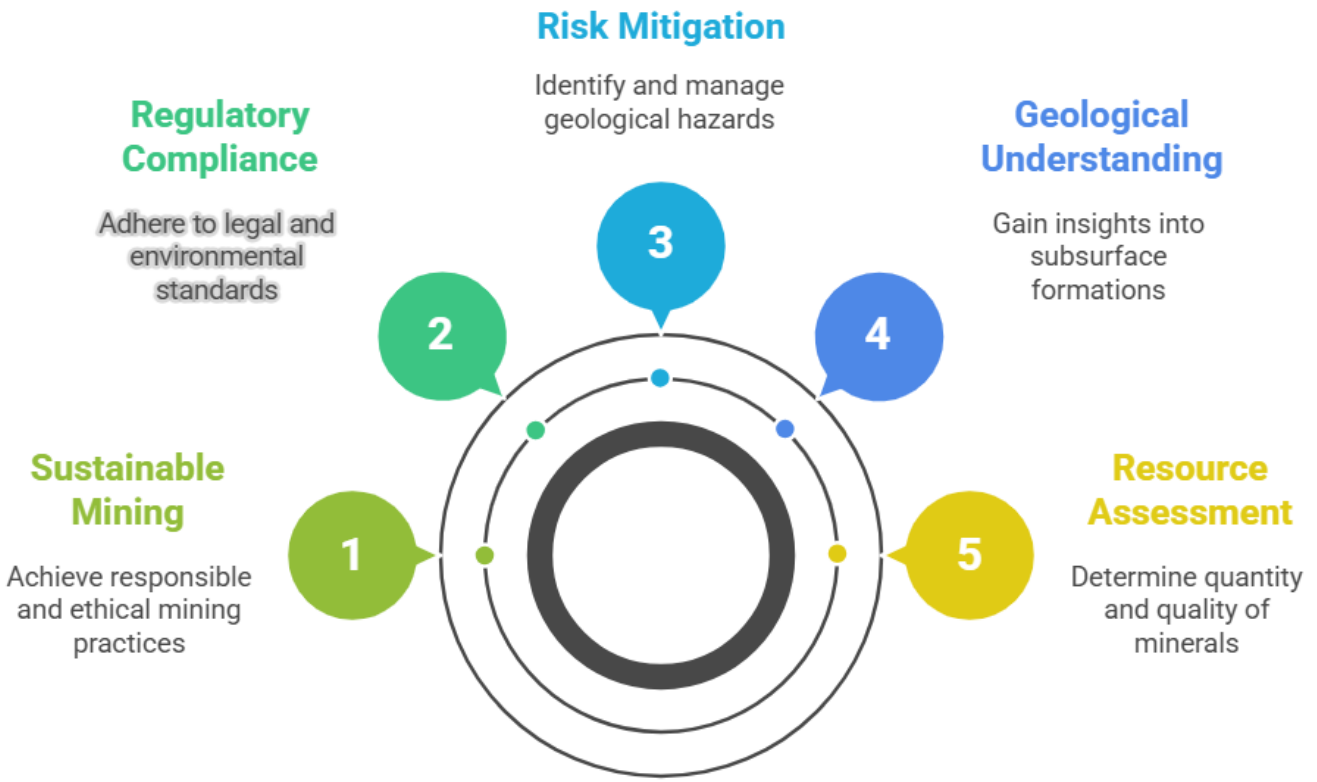


Figure 1-1: MMS Objectives overview

1.1 Activity Background

The proposed exploration drilling programme forms part of Seriti Power's efforts to quantify the mineral resource potential within the Albion Section of MMS. The project involves the drilling of exploration boreholes to delineate coal reserves, evaluate their quality and extent, and ensure compliance with relevant regulatory requirements, including the National Water Act, 1998 (Act No. 36 of 1998).

The activity will follow a structured methodology, encompassing site preparation and establishment, drilling operations, and closure and rehabilitation, each underpinned by stringent safety, environmental and quality control protocols.

1.2 Regional Setting and Locality Activity

The proposed Albion North Exploration Drilling Project is situated on portions 15 and the Remaining Extent (RE) of Portion 0 the farm Middeldrift 42 IS, within Ward 32 of the eMalahleni Local Municipality (LM), under the jurisdiction of the Nkangala District Municipality, in the Mpumalanga Province of South Africa. The project area forms part of Seriti's operational footprint associated with the Middelburg Mine Services (MMS) and is locally referred to as the Albion Section. This section lies within the broader Albion North Extension area. The project area lies within the Upper Olifants Water Management Area (WMA), specifically the B11G Quaternary Catchment. The nearest significant drainage feature is an unnamed tributary of the Olifants River, forming part of the B11G-01225

Sub-Quaternary Reach (SQR). These watercourses are non-perennial and are characterised by low baseflow and high seasonal variability. The site does not fall within a National Freshwater Ecosystem Priority Area (NFEPA).

The project area is positioned approximately 10 km northwest of eMalahleni (Witbank) and is accessible via the R547 regional road, which traverses the central portion of the project footprint in an east–west orientation. The Albion Section lies in a region characterised by extensive coal mining operations, agricultural fields, and associated mining infrastructure, including access roads, haul routes, and conveyor corridors.

The area experiences a summer rainfall pattern, with the Mean Annual Precipitation (MAP) estimated at approximately 680 mm/year. The highest monthly rainfall typically occurs between December and February, with long-term data indicating peaks up to 345 mm/month. The Mean Annual Runoff (MAR) from the B11G catchment is approximately 20 mm/year. Temperatures range from 0°C in winter to above 30°C in summer, with occasional frost events recorded during June and July.

The site does not fall within a National Freshwater Priority Area. The Olifants river drains west of the site and continues north through Witbank Dam, towards Loskop dam. It is forced east by the Transvaal Drakensberg, cutting through at the Abel Erasmus Pass and then flowing east further across the Lowveld to join the Letaba River.

Water users in the catchment are mostly related to domestic, irrigation, aquatic ecosystems, and recreation.

Table 1-1: Local setting of farm portions

Closest town	eMalahleni
District Municipality	Nkangala District Municipality
Local Municipality	eMalahleni Local Municipality
Catchment Zone	B11E
Water Management Area	Upper Olifants WMA

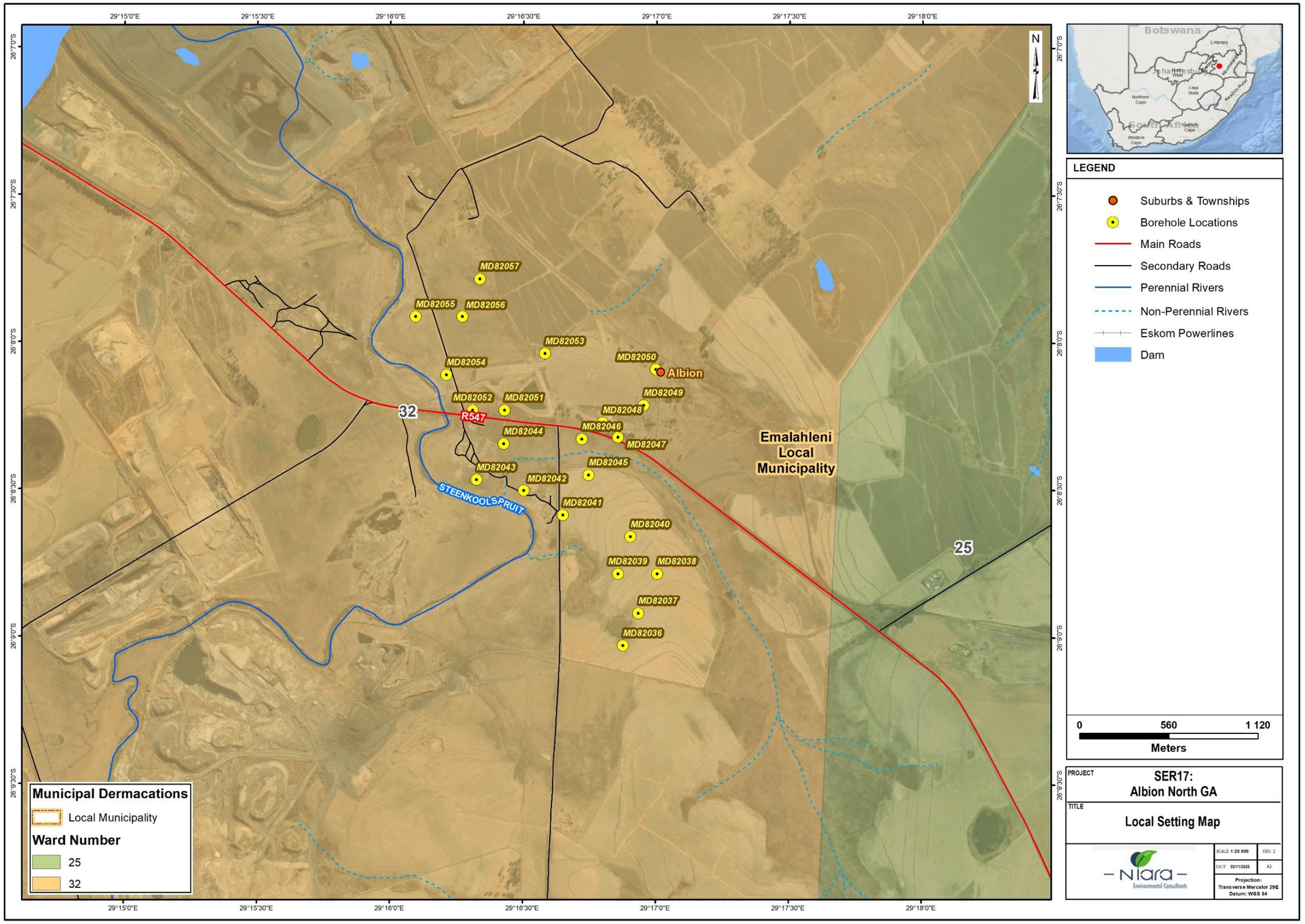


Figure 1-2: Locality Setting

1.3 Purpose of this Report

The GA Technical Report serves as a supporting document to accompany an application submitted in terms of Section 39 of theNWA. Its primary purpose is to provide the Department of Water and Sanitation (DWS) with sufficient technical and environmental information to enable an informed decision on whether the proposed activity may be authorised under the General Authorisation provisions, rather than requiring a full Water Use Licence (WUL).

The Report demonstrates that the proposed water uses, typically Section 21(c) (impeding or diverting the flow of water in a watercourse) and Section 21(i) (altering the bed, banks, course, or characteristics of a watercourse), are of limited extent and low risk, provided that mitigation and management measures are properly implemented.

Specifically, the GA Technical Report aims to:

- Describe the nature, purpose, and location of the proposed activity;
- Identify and map watercourses and potentially affected areas;
- Assess potential environmental risks associated with the proposed water uses;
- Outline mitigation and management measures to prevent or minimise impacts on water resources;
- Demonstrate compliance with Government Notice No. 509 of 2016, which sets out the requirements and conditions for General Authorisations; and
- Provide evidence of stakeholder notification and public participation, as required under Section 41(4) of the Act.

In summary, the GA Technical Report provides a scientific, legal, and procedural basis for DWS to determine whether the proposed activity qualifies for authorisation under the General Authorisation framework, ensuring that water resource protection, sustainability, and regulatory compliance are maintained

2 Conceptualisation of Activity

The proposed exploration drilling programme forms part of Seriti Power's efforts to quantify the mineral resource potential within the Albion Section of MMS. The project involves the drilling of exploration boreholes to delineate coal reserves, evaluate their quality and extent, and ensure compliance with relevant regulatory requirements, including the National Water Act, 1998 (Act No. 36 of 1998).

The activity will follow a structured methodology, encompassing site preparation and establishment, drilling operations, and closure and rehabilitation, each underpinned by stringent safety, environmental and quality control protocols.

2.1 Site Preparation and Establishment

Before drilling commences, each borehole location will be staked out under the supervision of a Mine Surveyor or Geologist, in line with the Laying Out and Staking Exploration Boreholes Protocol. Key preparatory steps include:

- Site Inspections: Joint inspections by the Drilling Crew and Supervisor to identify hazards (muddy patches, dragline cables, power lines, etc.).
- Job Safety Analysis (JSA): Conducted daily and at the start of each borehole, signed off by the Supervisor or Safety Officer prior to work commencing.
- Contractor Site Establishment Procedure: Implementation of direction boards, barricading, updated information boards, and predetermined escape routes.
- Safety Measures: Placement of sump guards, clearance of core packing areas, provision of firefighting and first aid equipment, portable lightning detection, and safe distancing of operations (≥30m from hazards unless otherwise approved).

Environmental and operational considerations during this phase include:

- Access Planning: Use of existing disturbed areas and tracks where possible, minimising new track construction and avoiding wetland channels.
- Track Management: Align tracks parallel to contours to reduce erosion risk.
- Borehole Positioning: Use of GPS to set out borehole positions while avoiding saturated soils.
- Vegetation Clearing: Restricted to immediate borehole areas; alien vegetation to be removed and disposed of appropriately.

2.2 Operations

Exploration drilling will be undertaken in strict adherence to the Mine's Standard Operating Procedures (SOPs) and the Contractor's Health, Safety, Environment and Community (HSEC) protocols.

Key operational controls include:

- Competence & Oversight: All Drill Operators and Assistants must be trained, competent, and authorised. The Project Manager will spend at least 60% of their time on-site.
- Personal Protective Equipment (PPE): Mandatory PPE includes level 5 cut-resistant gloves, hearing protection, and spare PPE on-site.
- Operational Protocols: Grounding all outriggers during drilling, maintaining a clean drill site, safe placement of drill rods (≥3m from borehole), and strict adherence to two-man lifting/loading protocols.

- Safety Procedures: Regular gas testing, 5m exclusion zone around boreholes, daily safety meetings, and Permit-to-Work (PTO) for high-risk or non-routine tasks.
- Repairs & Relocation: Onsite repairs only by qualified Artisans under strict lockout/tagout procedures. Hitching/unhitching of rigs must comply with Contractor SOPs.

2.3 Drilling Operations

The safety of the Drill Rig Operator is a fundamental priority during all drilling activities. The Operator must always be positioned in a manner that allows unrestricted access to the machine controls while maintaining a safe distance from moving and rotating components. To reduce risk from falling objects such as quill rods or pulleys, the drill rig is equipped with a protective canopy. The Operator is required to conduct all operations from beneath this canopy, thereby minimising the likelihood of injury from mechanical or structural hazards.

As an additional safeguard, the slide gate on the canopy must remain locked at all times during drilling. This control measure prevents inadvertent contact with rotating or moving parts of the rig, ensuring both the Operator's safety and the safe functioning of the equipment. Strict adherence to these protocols is essential to reducing accident potential and maintaining both operational efficiency and regulatory compliance.

Beyond operator safety, the drilling programme also incorporates a range of operational and environmental management measures to ensure responsible and effective implementation:

- Borehole Drilling: An NQ2 drill rig will be employed to drill boreholes with an approximate diameter of 76 mm. Emphasis will be placed on achieving high-quality core recovery from both overburden and rock strata.
- Fluid Management: Drilling water will be channelled into lined sumps or berms to prevent downslope spillage and contamination. All fluids, oils, and greases will be carefully handled and stored in accordance with site safety and environmental protocols.
- Waste Disposal: Drilling fluids, additives, and any potentially toxic substances will be disposed of responsibly to prevent environmental damage. Sealed plastic drop sheets will be used as a precaution against accidental spills or leaks.
- Borehole Profiling: Boreholes will be profiled in line with Southern African methodologies. Soil and rock horizons recovered from the core will be sampled, logged, and catalogued for geological analysis.
- Rehabilitation: Upon completion of drilling, sumps will be backfilled and boreholes rehabilitated. Excavated materials will be replaced in their correct stratigraphic order, and sites will be left clean, safe, and free of debris.
- Vehicle Management: Machinery will exit using the same access routes used for entry. Routes will be surveyed post-operation for ruts, with deep ruts filled or plugged to prevent erosion. No vehicle servicing, cleaning, or fuel storage will be permitted on-site to safeguard against environmental risks.

By implementing these combined safety, operational, and environmental protocols, the project ensures that drilling activities are conducted in a controlled, compliant, and sustainable manner, safeguarding personnel, the environment, and overall project outcomes.

2.4 Closure and Rehabilitation

Rehabilitation following drilling activities is a critical component of the exploration programme, aimed at minimising environmental impacts, restoring site integrity, and ensuring compliance with applicable legislation and best practice standards. Rehabilitation measures are designed in alignment with the findings of the Environmental Risk Assessment (ERA), ensuring that potential risks are proactively managed and mitigated.

Drill rigs will only be demobilised once all associated sumps and disturbed areas have been adequately backfilled, stabilised, and rehabilitated. Sumps must be filled and clearly demarcated using chevron tape to prevent accidental disturbance. Where non-biodegradable oils or other contaminants have been utilised, enhanced measures will be implemented. These include the application of approved biodegradation agents to contaminated soils or, where necessary, the excavation, removal, and rehabilitation of impacted material.

The Operational Geologist bears responsibility for overseeing all rehabilitation activities and ensuring compliance with prescribed standards. This includes:

- Conducting regular inspections of rehabilitated drill sites.
- Documenting outcomes on the official Borehole Header Sheet for record-keeping and accountability.
- Initiating thorough investigations in the event of environmental non-conformances, identifying root causes, and implementing corrective and preventative actions.

Proper management of drill core is also an essential element of closure. Drill core recovered from environmentally restricted areas will be handled in strict compliance with environmental authorisation conditions. Depending on the site context, core may either:

- Be disposed of at designated, approved areas following logging and sampling, or
- Remain on-site where future mine workings are planned in that direction, provided this does not contravene environmental or safety requirements.

2.5 Sealing of Boreholes

The sealing of boreholes is a critical step in ensuring the integrity and safety of drilling sites, and it is governed by specific protocols to adhere to regulatory and safety standards. As part of this process, the Drilling Company is responsible for sealing the borehole and issuing a sealing certificate to the Geologist, confirming that the borehole has been properly sealed. In areas where underground mining is either likely to take place, has occurred, or is indicated by the Environmental Risk Assessment, or at the request of the

Geologist, drill holes must be sealed with cement up to 1 meter from the collar. This precautionary measure helps to prevent potential underground issues and ensures the stability of the surrounding geological formations.

To ensure consistency and compliance with established procedures, the sealing of boreholes follows the guidelines outlined in the contractor's SOP. Adherence to these SOPs guarantees that the sealing process is conducted efficiently and effectively, minimizing the risk of environmental contamination and maintaining the overall integrity of the drilling site.

Figure 2-1: Exploration drilling process

2.6 Potential Water Uses

In terms of Section 21 of the National Water Act, 1998 (Act No. 36 of 1998), water uses that may be triggered by exploration drilling include:

- Section 21(c): Impeding or diverting the flow of water in a watercourse.
- Section 21(i): Altering the bed, banks, course or characteristics of a watercourse.

Table 2-1: S21 (c & i) Borehole location

Borehole Reference	Farm Name	Portion	SG Code	Coordinates	
				Latitude	Longitude
MD82036	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 9' 1.702" S	29° 16' 52.614" E
MD82037	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 55.105" S	29° 16' 56.088" E
MD82038	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 47.055" S	29° 17' 0.364" E
MD82039	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 47.072" S	29° 16' 51.491" E
MD82040	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 39.528" S	29° 16' 54.254" E

Borehole Reference	Farm Name	Portion	SG Code	Coordinates	
				Latitude	Longitude
MD82041	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 35.152" S	29° 16' 39.010" E
MD82042	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 30.124" S	29° 16' 30.188" E
MD82043	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 27.983" S	29° 16' 19.489" E
MD82044	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 20.658" S	29° 16' 25.663" E
MD82045	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 26.969" S	29° 16' 44.801" E
MD82046	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 19.654" S	29° 16' 43.276" E
MD82047	Middeldrift 42 IS	15/42	T0IS00000000004200015	26° 8' 19.272" S	29° 16' 51.443" E
MD82048	Middeldrift 42 IS	15/42	T0IS00000000004200015	26° 8' 16.275" S	29° 16' 47.948" E
MD82049	Middeldrift 42 IS	15/42	T0IS00000000004200015	26° 8' 12.756" S	29° 16' 57.233" E
MD82050	Middeldrift 42 IS	15/42	T0IS00000000004200015	26° 8' 5.451" S	29° 16' 59.952" E
MD82051	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 13.796" S	29° 16' 25.813" E
MD82052	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 13.810" S	29° 16' 18.641" E
MD82053	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 2.247" S	29° 16' 34.936" E
MD82054	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 8' 6.623" S	29° 16' 12.709" E
MD82055	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 7' 54.782" S	29° 16' 5.700" E
MD82056	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 7' 54.763" S	29° 16' 16.250" E
MD82057	Middeldrift 42 IS	RE/42	T0IS00000000004200000	26° 7' 47.067" S	29° 16' 20.227" E

A risk assessment matrix will be prepared in line with GN 509 of 2016, taking into account:

- The nature, scale and duration of the proposed activities.
- Potential risks to resource quality and mitigation measures.
- The Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) of watercourses within the project area.

This process ensures that all potential impacts, whether positive or negative, are assessed and effectively managed.

3 Baseline Wetland Assessment Methodology

3.1 Desktop Review of Existing Data

The National Water Act, Act 36 of 1998, defines wetlands as: "*Land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil*."

The presence of wetlands in the landscape can be linked to surface water and perched groundwater tables. Wetland types are differentiated based on their hydro-geomorphic (HGM) characteristics; i.e. on the position of the wetland in the landscape, as well as the way in which water moves in, through and out of the wetland systems as indicated in **Figure** 3-1 and **Table** 3-1 below. A schematic diagram of how these wetland systems are positioned in the landscape is given in the **Figure** 3-1 below.

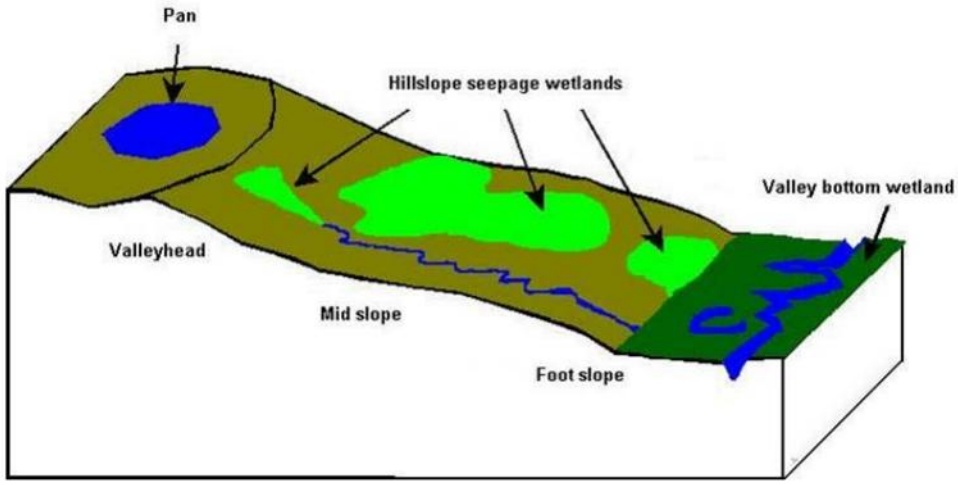
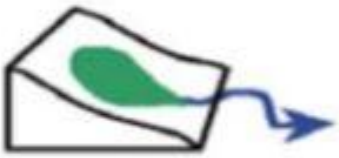


Figure 3-1: Diagram illustrating the position of the various wetland types within the landscape

Table 3-1: Wetland Hydrogeomorphic units (modified from Brinson 1993; Kotze 1999 and Marneweck and Batchelor 2002)

Wetland type	Position in the landscape	Description
Floodplain		Floodplains are similar to valley bottom areas with a well-defined stream channel, gently sloped and characterized by floodplain features such as oxbow depression and natural levees and the alluvial (by water) transport and deposition of sediment, usually leading to a net accumulation of sediment. Water inputs from main channel (when channel banks overspill) and from adjacent slopes.
Valley bottom with a channel		Valley bottom areas with a well-defined stream channel but lacking characteristic floodplain features. May be gently sloped and characterized by the net accumulation of alluvial deposits or may have steeper slopes and be characterized by the net loss of sediment. Water inputs from the main channel (when channel banks overspill) and from adjacent slopes.

Wetland type	Position in the landscape	Description
Valley bottom without a channel		Valley bottom areas with no clearly defined stream channel, usually gently sloped and characterized by alluvial sediment deposition, generally leading to a net accumulation of sediment. Water inputs mainly from the channel entering the wetland and also from adjacent slopes
Hillslope seepage linked to a stream channel.		Slopes on hillsides, which are characterized by colluvial (transported by gravity) movement of materials. Water inputs are mainly from subsurface flow and outflow is usually via a well-defined stream channel connecting the area directly to a stream channel
Isolated hillslope seepage		Slopes on hillsides that are characterized by colluvial transport (transported by gravity) movement of materials. Water inputs are from subsurface flow and outflow either very limited or through diffuse sub-surface flow but with no direct link to a surface water channel.
Pan/Depression		A basin-shaped area with a closed elevation contour that allows for the accumulation of surface water (ie. It is inward draining). It may also receive subsurface water. An outlet is usually absent and so this type of wetland is usually isolated from the stream network

Use was made of 1:50 000 topographical maps, 1:10 000 orthophotos and Google Earth Imagery to create digital base maps of the study area onto which the wetland/riparian zones boundaries could be delineated using ArcMap 10.2. A desktop delineation of suspected wetland/riparian zones was undertaken by identifying rivers and wetness indicators on the digital base maps. All identified areas suspected to be wetland/riparian zones were then further investigated in the field.

In addition, the National Wetland Inventory (SANBI) and the Atlas of Freshwater Ecosystem Priority Areas in South Africa (Nel et al., 2011) were consulted to determine the presence of wetland/river systems within the area. Existing wetland data around the study

area was consulted and utilized where applicable including wetland/riparian zones data from national wetland inventory and NFEPA wetland data.

The following information sources were considered for the desktop assessment;

- Aerial imagery (Google Earth Pro);
- Department of Water and Sanitation (DWS, 2018);
- The National Freshwater Ecosystem Priority Areas (Nel et al., 2011); and

3.2 Wetland Identification, Delineation and Classification

Field work for the wetland/riparian zone delineation study was undertaken in November 2025. During the field work, wetlands were identified and delineated according to the delineation procedure as set out by the "A Practical Field Procedure for the Identification and Delineation of Wetlands and Riparian Areas" document, as described by Department of Water Affairs and Forestry (DWAF) (2005) and Kotze and Marneweck (1999). A cross section of a typical wetland is presented in **Figure** 3-2 below. Using this procedure, wetlands were identified and delineated using the following indicators:

- Terrain Unit Indicator (Identifies those parts of the landscape where wetlands are more likely to occur);
- Soil Form Indicator (Identifies the soil forms, as defined by the Soil Classification Working Group (1991), which are associated with prolonged and frequent saturation;
- Soil Wetness Indicator (Identifies the morphological "signatures" developed in the soil profile as a result of prolonged and frequent saturation); and; and the
- Vegetation Indicator (Identifies hydrophilic vegetation associated with frequently saturated soils).

Vegetation is the primary indicator of a wetland, which must be present under normal circumstances. However, the soil wetness indicator tends to be the most important in the practice of wetland delineation. The remaining three indicators are used in a confirmatory role. The reason for this, is that the response of vegetation to changes in the soil moisture regime or management are relatively quick and may be transformed, whereas the morphological indicators in the soil are significantly more permanent and will hold the indications of frequent and prolonged saturation long after a wetland has been drained (perhaps several centuries) (DWAF, 2005).

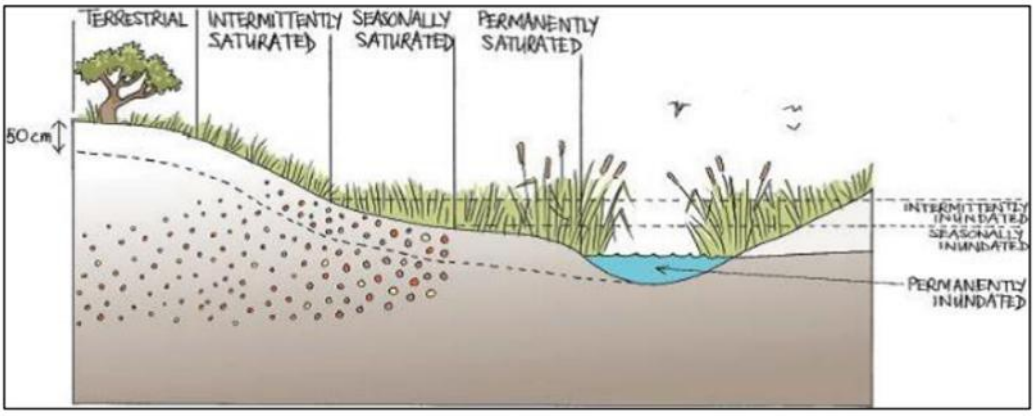


Figure 3-2: Cross section through a wetland, indicating how the soil wetness and vegetation indicators change (Ollis et al., 2013)

3.3 Riparian Zone Delineation and Assessment

Riparian area/zone delineation is similar to wetland delineation in that indicators are used to define the edge of the system. It considers indicators such as topography, vegetation, alluvial soils, and deposition of material to mark the outer edge of the macro-channel and its associated vegetation. **Figure** 3-3 below shows the typical morphology of a river channel.

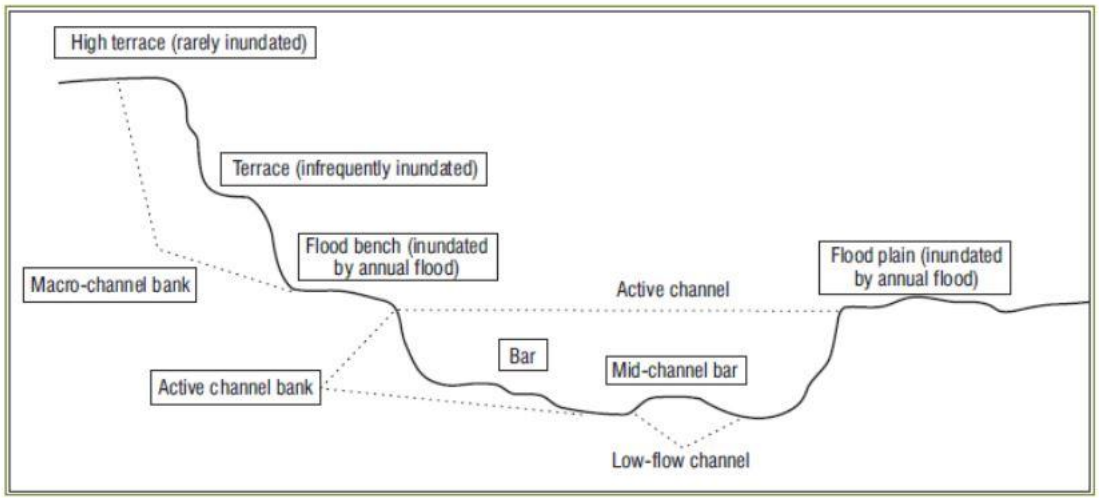


Figure 3-3: Typical cross-section of a river showing channel morphology 'A Practical Field Procedure for Identification and Delineation of Wetland and Riparian Areas – Edition 1' (DWAF, 2005)

A Practical Field Procedure for Identification and Delineation of Wetland and Riparian Areas (DWAF, 2005) was used in the delineation of the riparian zone boundary. Delineated riparian zones were then classified using a HGM classification system based on the system proposed by Ollis (2013). According to Cowan et al. (2005), riparian ecosystems are separated from other wetland ecosystems on the following three major features:

- They have linear form as a consequence of their proximity to rivers and form a boundary between the terrestrial and aquatic ecosystems.

- Energy and materials from the surrounding landscape converge and pass through riparian ecosystems. This amount is greater in terms of unit area than with any other system.
- Riparian ecosystems are connected hydrologically to both upstream and downstream ecosystems (intermittently).

3.4 Present Ecological Status (PES)

The overall approach is to quantify the impacts of human activity or clearly visible impacts on wetland health, and then to convert the impact scores to a Present Ecological Status (PES) score. This takes the form of assessing the spatial extent of impact of individual activities/occurrences and then separately assessing the intensity of impact of each activity in the affected area. The extent and intensity are then combined to determine an overall magnitude of impact. The Present State (PES) categories are provided in **Table 3-2** below.

Table 3-2: The PES categories (Macfarlane, et al. 2009)

Category	Description	Impact Score Range	Present State Category
None	Unmodified, natural	0 to 0.9	A
Small.	Largely Natural with few modifications. A slight change in ecosystem processes is discernible and a small loss of natural habitats and biota may have taken place	1.0 to 1.9	B
Moderate.	Moderately Modified. A moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact	2.0 to 3.9	C
Large	Largely Modified. A large change in ecosystem processes and loss of natural habitat and biota has occurred.	4.0 to 5.9	D
Serious	Seriously Modified. The change in ecosystem processes and loss of natural habitat and biota is great, but some remaining natural habitat features are still recognizable	. 6.0 to 7.9	E
Critical	Critically Modification. The modifications have reached a critical level and the ecosystem processes have been modified completely with an almost complete loss of natural habitat and biota.	8.0 to 10	F

3.5 Ecological Importance and Sensitivity (EIS)

The method used for the EIS determination was adapted from the method as provided by DWS (1999) for floodplains. The method takes into consideration PES scores obtained for WET-Health as well as function and service provision to enable the assessor to determine the most representative EIS category for the wetland feature or group being assessed. A series of determinants for EIS are assessed on a scale of 0 to 4, where 0 indicates no importance and 4 indicates very high importance. The mean of the determinants is used to assign the EIS category as listed in **Table 3-3**

Table 3-3: Description of EIS categories.

EIS Category	Range of Mean	Recommended Ecological Management Class
Very High: Wetlands that are considered ecologically important and sensitive on a national or even international level. The biodiversity of these wetlands is usually very sensitive to flow and habitat modifications. They play a major role in moderating the quantity and quality of water of major rivers.	3.1-4.0	A
High: Wetlands that are considered to be ecologically important and sensitive. The biodiversity of these wetlands may be sensitive to flow and habitat modifications. They play a role in moderating the quantity and quality of water of major rivers.	2.1-3.0	B
Moderate: Wetlands that are considered to be ecologically important and sensitive on a provincial or local scale. The biodiversity of these wetlands is not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water of major rivers.	1.1-20	C
Low marginal: Wetlands that is not ecologically important and sensitive at any scale. The biodiversity of these wetlands is ubiquitous and not sensitive to flow and habitat modifications. They play an insignificant role in moderating the quantity and quality of water of major rivers.	<1	D

4 Risk Assessment Methodology

The Risk/Impact Matrix is based on the DWS 2015 publication: Section 21(c)&(i) Water use Risk Assessment Protocol. The environmental risk/impact of any aspect is determined by a combination of parameters associated with the risk/impact. Each parameter connects the physical characteristics of an impact to a quantifiable value to rate the environmental risk. Impact assessments was conducted based on a methodology that includes the following:

- Clear processes for impact identification, predication and evaluation;

- Specification of the impact identification techniques;
- Criteria to evaluate the significance of impacts;
- Design of mitigation measures to lessen impacts;
- Definition of the different types of impacts (indirect, direct or cumulative); and
- Specification of uncertainties.

After all risks/impacts have been identified, the nature of each impact can be predicted. The risk/impact prediction considers the physical, biological, socio-economic and cultural information and will then estimate the likely parameters and characteristics of the impacts. The impact prediction will aim to provide a basis from which the significance of each risk/impact can be determined and appropriate mitigation measures can be developed.

The risk assessment methodology is based on defining and understanding the three basic components of the risk, i.e. the source of the risk, the pathway and the target that experiences the risk (receptor).

A summary of the water related impacts over the different phases of the rehabilitation project is presented in this section indicating the most significant impacts on water resources in the Project. This section has been referenced from DWA Risk-Based Water Use Authorisation Approach and Delegation Guidelines.

In order to assess each of the factors for each impact, the ranking scales as contained in **Table** 4-1 were used.

Table 4-1: Ranking scales for risk assessment

Severity	
Insignificant / non-harmful	1
Small / potentially harmful	2
Significant / slightly harmful	3
Great / harmful	4
Disastrous / extremely harmful and/or wetland(s) involved	5
Spatial Scale	
Area specific (at impact site)	1
Whole site (entire surface right)	2
Regional / neighbouring areas (downstream within quaternary catchment)	3
National (impacting beyond secondary catchment or provinces)	4
Global (impacting beyond SA boundary)	5
Duration	
One day to one month, PES, EIS and/or REC not impacted	1
One month to one year, PES, EIS and/or REC impacted but no change in status	2

One year to 10 years, PES, EIS and/or REC impacted to a lower status but can be improved over this period through mitigation	3
Life of the activity, PES, EIS and/or REC permanently lowered	4
More than life of the organisation/facility, PES and EIS scores, a E or F	5
Frequency of the activity	
Annually or less	1
6 monthly	2
Monthly	3
Weekly	4
Daily	5
Frequency of the incident/ impact	
Almost never / almost impossible / >20%	1
Very seldom / highly unlikely / >40%	2
Infrequent / unlikely / seldom / >60%	3
Often / regularly / likely / possible / >80%	4
Daily / highly likely / definitely / >100%	5
Legal Issues	
No legislation	1
Fully covered by legislation (wetlands are legally governed)	5
Detection	
Immediately	1
Without much effort	2
Need some effort	3
Remote and difficult to observe	4
Covered	5

The maximum value of significance is 300. Environmental impact/risks could therefore be rated as either high (H), moderate (M), or low (L) significance on the following basis:

- More than 170 points indicates high (H) environmental significance;
- Between 56 – 169 points indicate moderate (M) environmental significance;
- Less than 55 points indicates low (L) environmental significance

Table 4-2: Rating Class

Rating	Class	Management Description
1 – 55	(L) Low Risk	Acceptable as is or consider requirement for mitigation. Impact to watercourses and resource quality small and easily mitigated. Wetlands may be excluded.
56 – 169	M) Moderate Risk	Risk and impact on watercourses are notably and require mitigation measures on a higher level, which costs more and require specialist input. Wetlands are excluded.
170 – 300	(H) High Risk	Always involves wetlands. Watercourse(s) impacts by the activity are such that they impose a long-term threat on a large scale and lowering of the Reserve.

The methodology determines the environmental significance using the following equations:

Table 4-3: Calculations

Consequence =	Severity + Spatial Scale + Duration
Likelihood=	Frequency of Activity + Frequency of Incident +Legal Issues + Detection
Significance \Risk=	Consequence X Likelihood

The consequence of an impact can be derived from the following factors:

- Spatial scale;
- Duration of impact; and
- Severity / magnitude.

Significance is obtained by multiplying the consequence of the impact with the probability of occurrence, as follows:

- Significance = Consequence x Likelihood
- The maximum score that can be obtained is 300 significance points (**Table** 4-2).

In addition, impacts/risk were determined to be negative or positive based on the manner in which they affect the environment.

- Positive Environmental Impacts: Those activities that result in the overall environmental benefit;
- Negative Environmental impacts: Activities that result in an overall degradation of the environment.

4.1 Water and Waste Management

4.1.1 Water and Waste Management Philosophy

The applicant commits to an environmental management philosophy that provides a benchmark of high standards for employees and contractors, ensuring full compliance with all legal requirements and key performance objectives. The approach focuses on preventing adverse environmental impacts, managing drilling activities sustainably, ceasing significant harmful activities, and effectively remedying any negative outcomes arising from operations.

- Water use will be minimised and recycling prioritised to reduce strain on local water resources (Department of Water and Sanitation, 1998).
- Waste generation will be controlled, ensuring all waste is treated to acceptable standards and pollution incidents reported to the relevant authorities (Department of Environmental Affairs, 2023).
- A comprehensive, integrated site-wide plan for water and waste management will be implemented to govern all drilling activity phases (Minerals Council South Africa, 2023).

4.1.2 General Strategies

To realise this philosophy, the applicant will employ the following strategies:

- Planning drilling activities in alignment with impact predictions and mitigation measures (Department of Mineral Resources and Energy, 2024).
- Ensuring legal and regulatory requirements are met throughout planning, operational, and decommissioning phases.
- Engaging specialists to contribute to impact rectification as necessary.
- Adopting best practice guidelines consistently.
- Complying fully with all conditions set by authorities without exception.
- Promoting environmental awareness among all personnel.
- Defining achievable post-closure objectives to rehabilitate the operational footprint.
- Implementing mitigation measures identified in risk assessments (GN 509, 2016).

4.1.3 Performance Objectives and Goals

Seriti Power commits to sustainable development and effective environmental management to maintain environmental integrity during drilling and exploration operations. Key objectives include:

Table 4-4: Performance Objectives and Goals

Aspect	Performance Objective
Water Quantity	Sustainable use of water on site through measures, plans, and programmes.
Water Quality	Prevention of direct or indirect degradation of water quality during operations and decommissioning phases.
Waste	Waste minimisation and management to avoid risks to water resources and the environment (GN 509, 2016).

4.1.4 Measures to Achieve and Sustain Performance Objectives

To achieve these objectives, the applicant will ensure:

- Implementation of specialist recommendations approved by competent authorities.
- Compliance with all regulatory conditions and environmental legislation.
- Adherence to internationally and nationally recognised best practice guidelines.
- Full observance of all relevant South African environmental and water legislation (National Water Act, 1998; Environmental Management Act, 2007).

5 Baseline Wetland Assessment Findings

5.1 Wetland Delineation and Typing

The wetland areas were delineated in accordance with the (DWAF, 2005) guidelines, whereby features such as soil, vegetation and topography were considered. According to the wetland definition used in the NWA, Act 36 of 1998, typical wetland vegetation is the primary indicator, which must be present under normal circumstances, however, in practice the soil wetness indicator tends to be the most important, and the other three indicators are used in a confirmatory role. The soil wetness indicator is based on the presence of hydromorphic features in the soil. The hydromorphic features in the soil develop as a result of a fluctuating water table and prolonged periods of anaerobic soil conditions. Prolonged periods of anaerobic soil conditions result in a change in the chemical characteristics of the soil. Certain soil components, such as iron and manganese, which are insoluble under aerobic conditions, become soluble when the soil becomes anaerobic, and can thus be leached out of the soil profile. The fluctuation of the water table results in the alternation between aerobic and anaerobic conditions within the soil profile. Lowering of the water table results in a switch from anaerobic to aerobic soil conditions, causing dissolved iron to return to an insoluble state and precipitate in the form of mottles or gleying which is described as the redoximorphic features in the soils.

Wetland vegetation communities also known as hydrophytes are species that have adapted to some level of inundation of the soil and 'facultative hydrophytes' are able to survive in both inundated and terrestrial soils. A hydrophytic plant community is dominated by species that have been distributed as a result of hydrological factors such as: flow rates, water depth, timing and duration of

flooding, sediment accumulation, and underground water exchange. Hydrophytes are used as indicators of the presence of wetlands and have been listed according to the DWAF specifications. The type and distribution of these species is dependent on the hydroperiod (characterized by the duration and the depth of flooding). Some of the identified hydrophytes include species such as *Juncus effuses, various Cyperaceous species, Sporobolus sp., Eragrostis sp. Monopsis decipiens, Lobelia sp*, and several *Helichrysum* species.

The wetland delineation was conducted with the aid of aerial imagery as well as a site visit conducted on the 10th of November 2025 at the Albion North Resource Quantification Project Area. Findings indicate that four wetland hydro-geomorphic (HGM) units were identified within the project area as indicated in **Figure** 5-1. The identified wetland HGM units are classified as follows:

- HGM Unit 1: Steenkoolspruit Riparian Zone
- HGM Unit 2: Hillslope Seepage Wetland
- HGM Unit 3: Channelled Valley Bottom Wetland
- HGM Unit 4: Hillslope Seepage Wetland

An HGM unit is a recognisable physiographic wetland-unit based on the geomorphic setting, water source of the wetland and the water flow patterns (Macfarlane et al., 2009). Below is the description of each HGM unit.

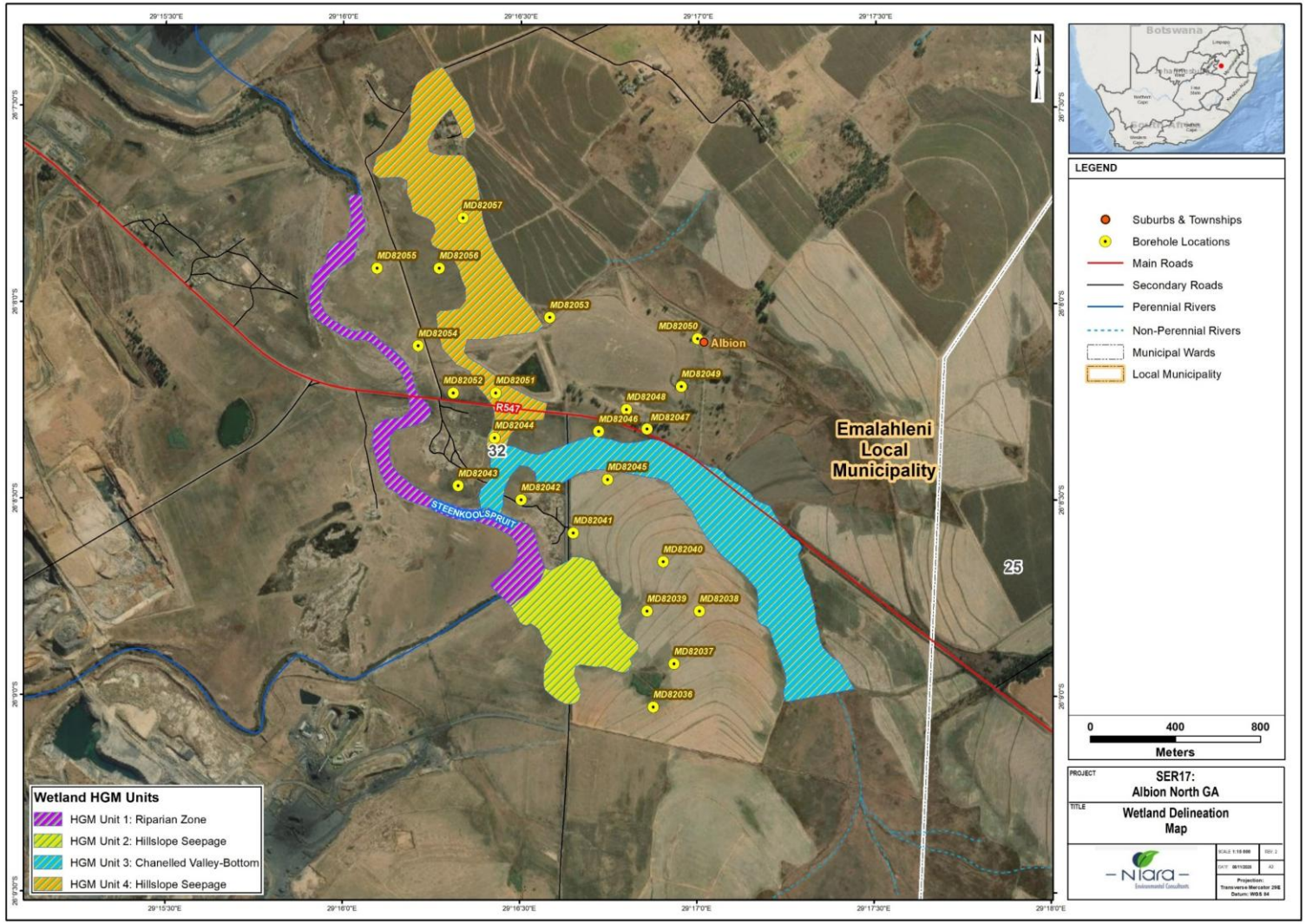


Figure 5-1: Map of the delineated wetland areas within the Albion North Resource Quantification Area

5.1.1 HGM Unit 1: Steenkoolspruit Riparian Zone

The Steenkoolspruit riparian zone and the associated active channel was observed during the field assessment conducted on the 10th of November 2025. The Steenkoolspruit active channel and the associated riparian zone forms the northern boundary of the Albion North Resource Quantification Project Area. The physical structure of the riparian zone within the Albion resource quantification area is relatively undisturbed and the site is characterised by predominantly indigenous, naturally occurring vegetation.

The dominant vegetation within the resource quantification area are grasses with pockets of herbs and woody species identified upstream of the project area. The following grass and sedge species occur: *Panicum coloratum, Setaria sphacelata, Aristida congesta, Cyperus sexangularis, Commelina diffusa subsp. scandens, Persicaria decipiens*, etc. Exotic vegetation such as *Verbena bonariensis*, *Tagetes minuta*, *Ricinus communis*, *Lantana camara*, etc. occur.

The edge of the flood zone was identified using the macro-channel indicators such as alluvial soils and a physical terrace where a change between the riparian area and the upland (terrestrial) slopes occurs.

None of the proposed resource quantification boreholes fall within the delineated Steenkoolspruit Riparian Zone. As such the delineated Steenkoolspruit Riparian Zone will not be directly impacted by the proposed Albion North Resource Quantification Project drilling of boreholes.

5.1.2 HGM Unit 2 and HGM Unit 4: Hillslope Seepage Wetlands

HGM Unit 2 and HGM Unit 4 were identified as typical hillslope seepage wetlands during the field assessments conducted on the 10th of November 2025. These hillslope seepage has been channelised and drained due to current and historical anthropogenic activities such as farming and open cast coal mining in the area.

Hillslope seepage wetlands occur on (gently to steeply) sloping land, which is dominated by the colluvial (i.e. gravity-driven), unidirectional movement of material down-slope. Water inputs are primarily from groundwater or precipitation that enters the wetland from an up-slope direction in the form of subsurface flow. Water movement through the wetland is mainly in the form of interflow, with diffuse overland flow ('sheetwash') often being significant during and after rainfall events. Water leaves a 'hillslope seep with channelled outflow' mostly by means of concentrated surface flow, whereas water leaves a 'hillslope seep without channelled outflow' by means of a combination of diffuse surface flow, interflow, evaporation and infiltration.

None of the proposed resource quantification boreholes fall within the delineated HGM Unit 2. As such HGM Unit 2 will not be directly impacted by the proposed Albion North Resource Quantification Project drilling of boreholes.

A total of 3 (MD82057, MD82051 and MD82044) resource quantification boreholes fall within the delineated HGM Unit 4. As such the HGM Unit 4 will be directly impacted by the proposed Albion North Resource Quantification Project drilling of boreholes.

5.1.3 HGM Unit 3: Channelled Valley Bottom Wetland

HGM Unit 3 was identified as a channelled valley bottom wetland during the field assessments conducted on the 10th of November 2025. Channelled valley bottom wetlands are located at the lowest position in a landscape where the water drained from the local slopes accumulate. Water expressed in the hillslope seepage wetlands may also drain towards the valley bottom wetlands. These

wetland systems play important functions such as sediment trapping, flood attenuation and nutrient-cycling. The valley bottom wetland on site receives return water from the water treatment facilities in the area. The vegetation communities in the channelled valley bottom wetlands reduce the water retention time, thus providing an opportunity for flood and contaminant (nutrients, pesticides, herbicides) attenuation. Extensive areas of these wetlands remain saturated as stream channel input is spread diffusely across the valley bottom, even at low flows (Kotze et al., 2007). These wetlands also tend to have a high organic content. Facultative wetland indicator plant species, comprising a mixture of grasses and sedges are evident as longitudinal bands within a relatively narrow zone along the valley bottoms. Facultative wetland plant species usually grow in wetlands (67-99% of occurrences) but occasionally are found in non-wetland areas.

None of the proposed resource quantification boreholes fall within the delineated HGM Unit 3. As such HGM Unit 3 will not be directly impacted by the proposed Albion North Resource Quantification Project drilling of boreholes.

5.2 Present Ecological Status

The identified wetlands within the two resource quantification areas are located within areas where a lot of economic activity including human settlements, cattle farming, crop farming, coal mining and power generation. Some of the anthropogenic impacts identified on the wetlands include:

- Active and historical coal mining activities that are encroaching into wetlands and riparian zones;
- Livestock and grazing of varying intensity leading to wetland vegetation degradation and reduced species diversity;
- Crop farming encroaching into the edges of the wetland areas;
- Informal road crossings diverting surface water flow resulting in erosion;
- Exotic vegetation and weed encroachment within wetlands and riparian zones
- Cut-off trenches and berms placed to drain certain wetlands or convey flows away from infrastructure leading to a reduction in the natural extent or degree of saturation of the wetlands affected; and
- Head-cut erosion resulting in desiccation of wetland areas;
- Historical resource quantification activities;
- Road crossings with a single culvert;

The Present Ecological Status of the wetlands within the project area is indicated in **Figure** 5-2, below were as follows:

- HGM Unit 1: Steenkoolspruit Riparian Zone. The Steenkoolspruit Riparian Zone located within the Albion North Resource Quantification Project Area was found to have deviated from the reference condition such that it has been classified as Moderately Modified (PES-C) where a moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact.

- HGM Unit 2 and HGM Unit 4: Hillslope Seepage Wetlands. The hillslope seepage wetlands located within the Albion North Resource Quantification Project Area were found to have significantly deviated from the reference condition such that the classification ranged from Largely Modified (PES-D) (where a large change in ecosystem processes and loss of natural habitat and biota has occurred) to Seriously Modified (PES-E) (where the change in ecosystem processes and loss of natural habitat and biota is great, but some remaining natural habitat features are still recognizable).
- HGM Unit 4: Channelled Valley Bottom Wetland. The channelled valley bottom wetland located within the Albion North Resource Quantification Project Area was found to have deviated from the reference condition such that it has been classified as Moderately Modified (PES-C) where a moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact.

The integrity of the wetland areas identified within the Albion North Resource Quantification Project Area have significantly deviated from reference conditions due to current and historical land use activities such as coal mining and crop farming. Coal mining in and around the Albion North Resource Quantification Project Area have resulted in significant negative impacts on wetland health of the delineated wetlands affecting their hydrology, water quality, soils, vegetation and biodiversity. Some of the identified impacts include:

- Surface flow changes: Construction and operation of access roads, haul roads, spoil heaps, and pits have resulted in the redirection of natural water flow, leading to either flooding or desiccation of wetlands,
- Increased sedimentation**:** Erosion and mobilisation of soil hips from mining sites have introduced sediment that clogs wetland channels, smothers vegetation, and reduces light penetration.
- Soil compaction and contamination: Heavy machinery and waste deposition has resulted in the compaction of soils and introduction of toxins hindering plant growth.
- Habitat loss and fragmentation**:** Wetlands are critical habitats for amphibians, birds, and invertebrates. Mining-induced changes in water quality have led to the decline of sensitive indigenous species.

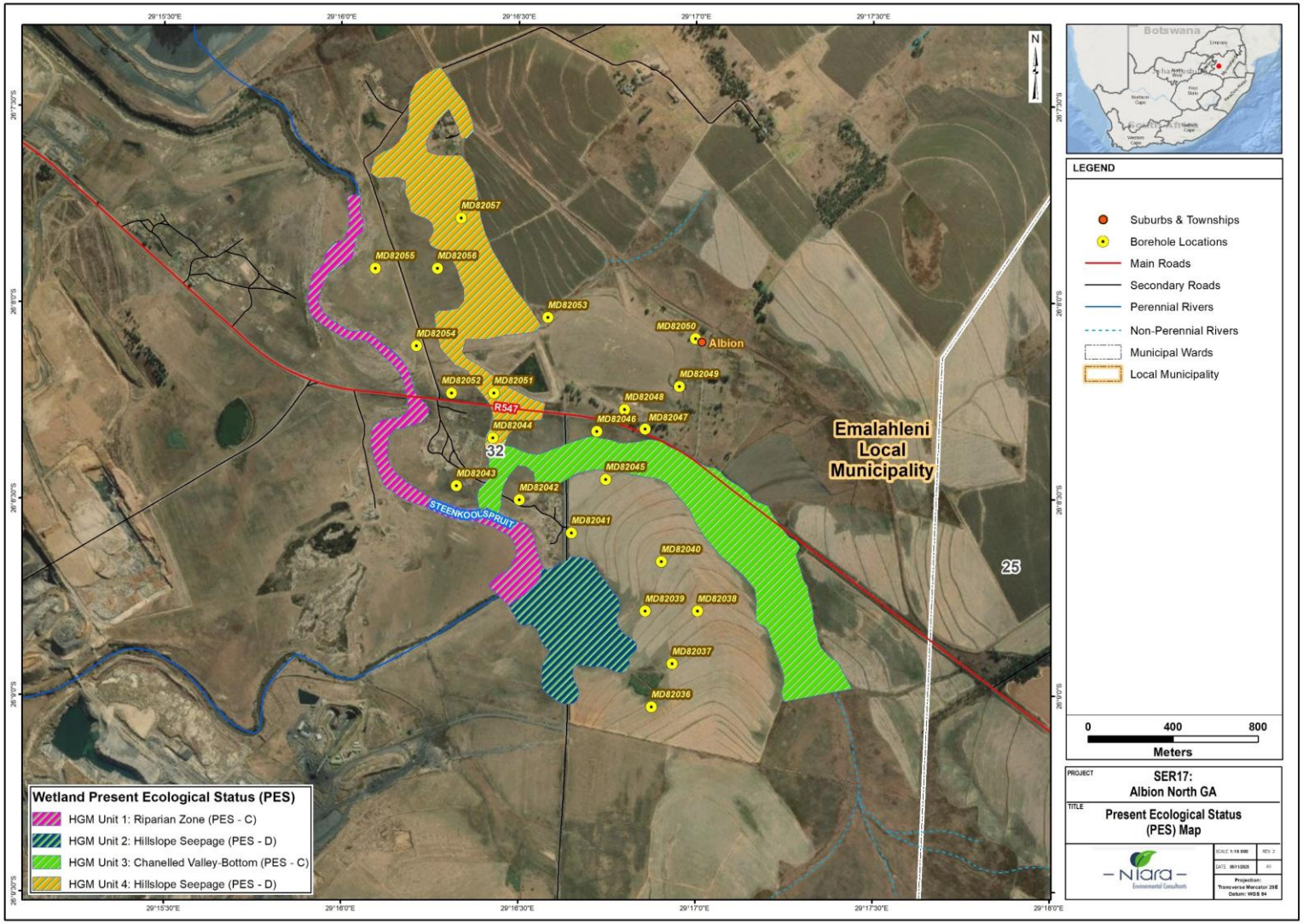


Figure 5-2: Map indicating the Present Ecological Status of the delineated wetlands within the Albion North Resource Quantification Area.

5.3 Ecological Importance and Sensitivity (EIS)

The wetlands within the project area form part of the Olifants River Primary catchment which is a heavily utilised and economically important catchment in the South African context. Wetlands and rivers within the Olifants River Catchment upstream of Loskop Dam have been greatly impacted upon by various activities, which include mining, power generation (several Power Station), water abstraction, urbanization, agriculture etc. As a result of these impacts serious water quality and quantity concerns have been raised within the sub-catchment. The Ecological Importance and Sensitivity of wetlands within the project area is indicated in **Figure** 5-3.

All the identified wetland HGM Units within the Albion North Resource Quantification Project Area were found to be **Moderate:** Wetlands that are considered to be ecologically important and sensitive on a provincial or local scale. The biodiversity of these wetlands is not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water of major rivers.

- HGM Unit 1: Steenkoolspruit Riparian Zone: Moderate:
- HGM Unit 2 and Unit 4: Hillslope Seepage Wetlands: Moderate:
- HGM Unit 3: Channelled Valley Bottom Wetlands: Moderate:

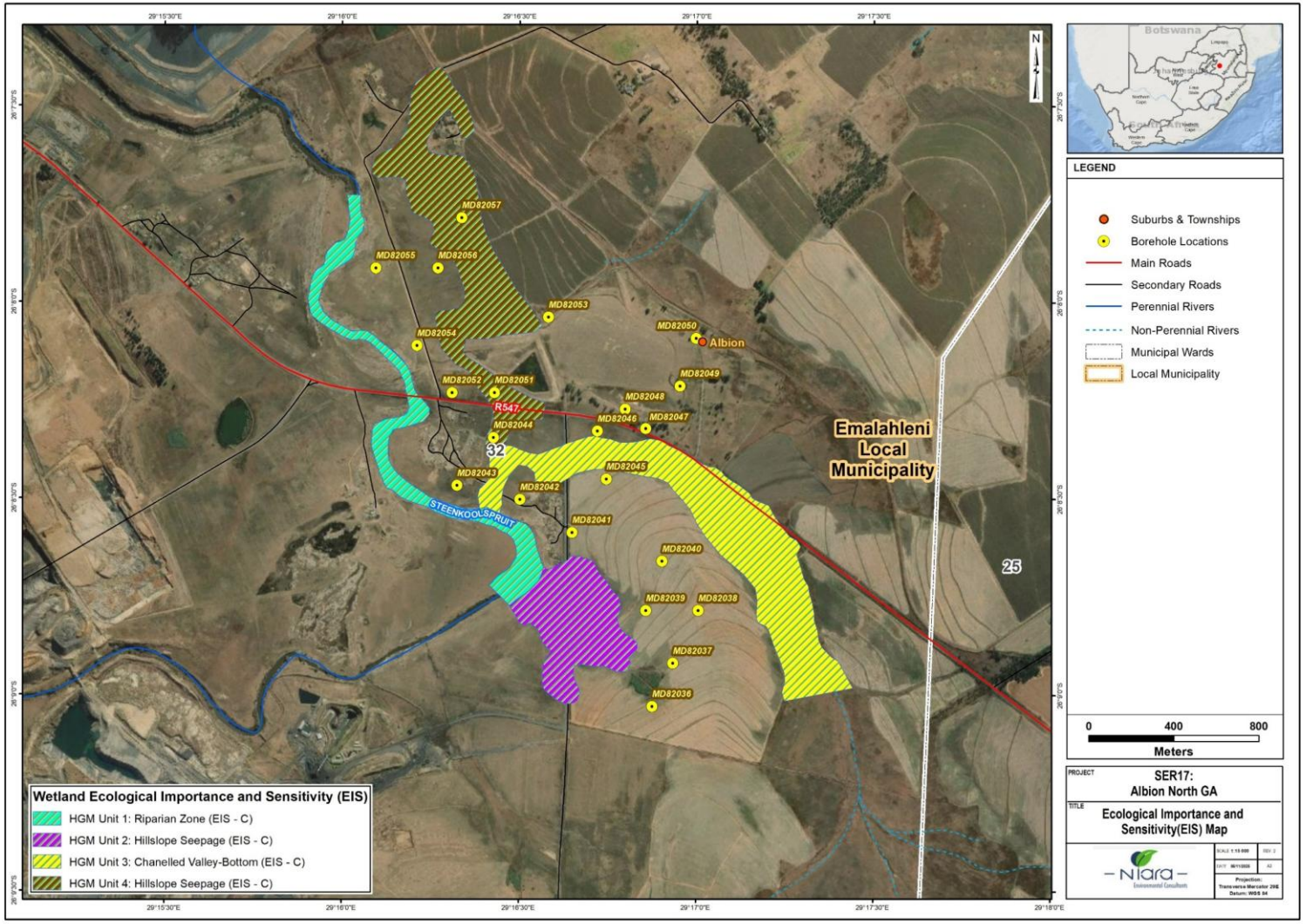


Figure 5-3: Map indicating the Ecological Importance and Sensitivity (EIS) of wetlands within the Albion North Resource Quantification Area

5.4 Buffer Zone calculation

The buffer zones are a requirement in order to facilitate the protection of the delineated wetland areas within the project area. The purpose of the establishment of buffer zones is to minimize the anthropogenic impacts associated with development on the receiving water resources. A buffer zone is defined as:

"the strips of undeveloped, typically vegetated land (composed in many cases of riparian habitat or terrestrial plant communities) which separate development or adjacent land uses from aquatic ecosystems (rivers and wetlands)."

The "Preliminary Guideline for the Determination of Buffer Zones for Rivers, Wetlands and Estuaries" (Macfarlane et al., 2014) was considered to determine the appropriate buffer zone for the proposed activity. A buffer zone could not be calculated for the proposed drilling of resource quantification boreholes as these are temporary and will be rehabilitated following project completion.

5.5 Risk Assessment Matrix

GN 509 was issued under Section 39 of the NWA to enable water users, or those planning water use activities, to apply for a WUL for activities outlined in Section 21(c) & (i) using a GA, rather than a full WULA. These activities may include general construction, maintenance and/or emergency work, river and stormwater management activities, and initiatives for wetland or river rehabilitation within the regulated area of a watercourse as defined in GN 509. To qualify for a GA under GN 509, the proposed water use/activity must undergo assessment using the DWS RAM. The environmental impacts on the identified wetlands in the area have been risk assessed and the findings are indicated in Table 4-4 below. Only the Construction and Rehabilitation phases were risk assessed since no ongoing operations that will take place onsite.

Aspect	Pre-Mitigation											Proposed Mitigation Measures	Post-Mitigation										
	Severity	Spatial Scale	Duration	Consequence	Frequency of activity	Frequency of incident	Legal Issues	Detection	Likelihood	**Significance**	Risk Rating		Severity	Spatial Scale	Duration	**Consequence**	Frequency of activity	Frequency of incident	Legal Issues	Detection	**Likelihood**	**Significance**	**Risk Rating**
Construction Phase																							
Vehicle access	3	1	2	6	2	3	5	3	13	**78**	**Moderate**	• All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a “clean” working area, and report any (potential) risks to the environment as a result of the drilling programme • Vehicle access to the site and drilling positions should use existing tracks. • Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use; • Drilling of boreholes should ideally take place during the dry season to reduce the erosion potential of the exposed surfaces;	1	1	2	4	1	1	5	1	8	**32**	**Low**
Establishment of the construction yard	2	1	2	5	2	4	1	3	10	**50**	**Low**	• Construction yard must be located outside of the delineated wetland areas. • The Resource quantification process should ideally take place during the dry season to reduce the erosion potential of the exposed surfaces; • The footprint area of the construction yard must be kept a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas; • Adequate sanitary facilities and ablutions must be provided for all personnel throughout the project area. Use of these facilities must be enforced (these facilities must be kept clean so that they are a desired alternative to the surrounding vegetation); • Disturbed surface areas in the construction phase to be rehabilitated after completion of construction; • All construction material, equipment and any foreign objects brought into the area by contractors and staff to be removed after completion of construction. • All waste removed from the resource quantification site must be disposed at an appropriate disposal facility; • All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a “clean” working area, and report any (potential) risks to the environment as a result of the drilling programme;	1	1	2	4	1	1	1	1	4	**16**	**Low**

Aspect	Pre-Mitigation											Proposed Mitigation Measures	Post-Mitigation										
	Severity	Spatial Scale	Duration	Consequence	Frequency of activity	Frequency of incident	Legal Issues	Detection	Likelihood	**Significance**	Risk Rating		Severity	Spatial Scale	Duration	**Consequence**	Frequency of activity	Frequency of incident	Legal Issues	Detection	**Likelihood**	**Significance**	**Risk Rating**
Vegetation clearing	2	1	2	5	1	3	5	3	12	**60**	**Moderate**	• Removed vegetation should be preserved and replaced for rehabilitation of the drill sites. Rehabilitation should be completed for the closure of each hole, and not at the end of the drilling programme; • Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the drill site; • All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a “clean” working area, and report any (potential) risks to the environment as a result of the drilling programme; • Alien vegetation encountered on the drill sites must be physically removed from the area prior to commencement with drilling activities.	1	1	2	4	1	2	5	1	9	**36**	**Low**
Stripping and stockpiling of topsoil	2	1	2	5	1	3	5	3	12	**60**	**Moderate**	• Removed vegetation should be preserved and replaced for rehabilitation of the drill sites. Rehabilitation should be completed for the closure of each hole, and not at the end of the drilling programme; • Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the drill site; • All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a “clean” working area, and report any (potential) risks to the environment as a result of the drilling programme; • The Resource quantification process should ideally take place during the dry season to reduce the erosion potential of the exposed surfaces;	1	1	2	4	1	2	5	1	9	**36**	**Low**
Digging of sump	2	1	2	5	1	3	5	3	12	**60**	**Moderate**	• Removed vegetation should be preserved and replaced for rehabilitation of the drill sites. Rehabilitation should be completed for the closure of each hole, and not at the end of the drilling programme; • Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the drill site; • All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a “clean” working area, and report any (potential) risks to the environment as a result of the drilling programme; • The Resource quantification process should ideally take place during the dry season to reduce the erosion potential of the exposed surfaces;	1	1	2	4	1	2	5	1	9	**36**	**Low**

Aspect	Pre-Mitigation											Proposed Mitigation Measures	Post-Mitigation										
	Severity	Spatial Scale	Duration	Consequence	Frequency of activity	Frequency of incident	Legal Issues	Detection	Likelihood	**Significance**	Risk Rating		Severity	Spatial Scale	Duration	**Consequence**	Frequency of activity	Frequency of incident	Legal Issues	Detection	**Likelihood**	**Significance**	**Risk Rating**
Hydrocarbon leaks, spills and overfills from machinery, equipment & vehicles	3	3	3	9	3	2	5	3	13	117	Moderate	• All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a “clean” working area, and report any (potential) risks to the environment as a result of the drilling programme; • Care must be taken in the handling and storage of all drilling fluids, oils, greases and fuel on site, including all drilling vehicle and support vehicle fluids; • Sufficient spill clean-up material must be kept on site at all times to deal with minor spills. All spills should be reported to the Environmental Officer and the relevant authorities (DWS) immediately, with specialists appointed to oversee the clean-up operations; • No drilling equipment should be fixed onsite. All malfunctioning drilling equipment must be moved designated workshop areas for fixing; • No servicing or cleaning of vehicles/machinery to take place on site. • No storage of fuel and diesel on site. • Ensure that no equipment is washed in the streams and wetlands of the area, and if washing facilities are provided, that these are placed no closer than 100m from a wetland or water course; • No abstraction of water from the wetlands or any of the river systems draining the study area for drilling purposes; • In order to reduce the potential impacts associated with the introduction of contaminants dissolved or suspended in the runoff from drilling, where practically possible, no runoff should be introduced into wetlands directly; • Any incident that may cause pollution of any water resource must immediately be reported to the relevant authorities as per the NEMA Section 30 incident report process. • Pollution incidents must be dealt with in accordance with Section 19 and 20 of the National Water Act. • All Resource Quality Objectives (RQO’s) relevant to water quality of the water resource as established in the document “Proposed Reserve Determination of Water Resources for the Upper Vaal Catchment” (DWS, 2018) should be adhered to	2	2	1	5	2	2	1	2	7	35	Low
Rehabilitation Phase																							

Aspect	Pre-Mitigation											Proposed Mitigation Measures	Post-Mitigation										
	Severity	Spatial Scale	Duration	Consequence	Frequency of activity	Frequency of incident	Legal Issues	Detection	Likelihood	**Significance**	Risk Rating		Severity	Spatial Scale	Duration	**Consequence**	Frequency of activity	Frequency of incident	Legal Issues	Detection	**Likelihood**	**Significance**	**Risk Rating**
Backfilling of exploration boreholes	2	2	1	5	1	3	5	3	12	**60**	**Moderate**	• All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a “clean” working area, and report any (potential) risks to the environment as a result of the drilling programme; • Removed vegetation should be preserved and replaced for rehabilitation of the drill sites. Rehabilitation should be completed for the closure of each hole, and not at the end of the drilling programme; • Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the drill site;	1	1	2	4	1	2	5	1	9	**36**	**Low**
Decommissioning of the construction yard	2	1	2	4	2	4	1	3	10	**40**	**Low**	• All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a “clean” working area, and report any (potential) risks to the environment as a result of the drilling programme; • Removed vegetation should be preserved and replaced for rehabilitation of the drill sites. Rehabilitation should be completed for the closure of each hole, and not at the end of the drilling programme; • Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the drill site; • The Resource quantification process should ideally take place during the dry season to reduce the erosion potential of the exposed surfaces;	1	1	2	4	1	1	1	1	4	**16**	**Low**
Establishment and spread of alien vegetation	2	2	3	7	2	3	5	2	12	**84**	**Moderate**	• All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a “clean” working area, and report any (potential) risks to the environment as a result of the drilling programme; • Bush clearing and excavation of sumps adjacent to drill location. Vegetation clearing should only be undertaken if absolutely necessary and should be limited to the smallest footprint possible, i.e. direct vicinity of the borehole; • Where alien vegetation is cleared, all cuttings will be removed from site and appropriately disposed of. • An alien vegetation management plan should be compiled by an ecologist during the operational phase of the mine and should be kept in place for several years following mine closure (minimum of five years); • All species of alien invasive vegetation should be controlled and removed from site. No spread of alien vegetation into any wetlands or adjacent properties should be allowed; • Vegetation clearing should only take place where necessary;	2	2	3	7	2	2	1	2	7	**49**	**Low**

6 Water and Waste Management

6.1 Water and Waste Management Philosophy

Seriti Power (Pty) Ltd adopts an environmental management philosophy grounded in sustainability, legal compliance, and continuous improvement. This philosophy serves as a benchmark for all employees and contractors involved in exploration drilling activities. The applicant is committed to preventing environmental degradation, responsibly managing natural resources, and ensuring that all operations align with national legislation, industry best practice, and site-specific performance objectives.

The overarching principles guiding water and waste management during the proposed exploration drilling programme are as follows:

- Protection of Water Resources: Water will be used efficiently, with an emphasis on minimisation, recycling and responsible handling of seepage or drilling water to reduce pressure on local watercourses.
- Responsible Waste Management: Waste generation will be minimised as far as reasonably practicable. All waste produced will be stored, handled, transported and disposed of in accordance with applicable legal requirements and acceptable environmental standards.
- Pollution Prevention: Any actual or potential pollution incidents will be reported to the competent authority without delay and addressed through appropriate corrective measures.
- Integrated Management: All aspects of water use, storage, waste handling, and disposal will form part of an integrated, site-wide water and waste management plan that supports sustainable development.

This philosophy reflects Seriti's commitment to maintaining environmental integrity while enabling responsible resource exploration.

6.2 General Strategies

To give effect to the above philosophy and ensure that drilling activities are carried out responsibly throughout the planning, operational and decommissioning phases, the applicant will implement the following strategic measures:

- Planning and Design: Exploration drilling must follow the approved scope, layout and methodologies that informed the impact assessment and mitigation measures. Any deviation must be carefully evaluated for environmental implications.
- Legal Compliance: All activities must comply with relevant national legislation, including the NWA, NEMA principles, and Mine Health and Safety Act requirements, as well as any conditions imposed by competent authorities.
- Corrective Action: Should adverse impacts occur, relevant specialists must be available to guide remedial actions, implement corrective measures, and ensure that impacts are reduced to acceptable levels.
- Adherence to Best Practice: Industry Best Practice Guidelines for exploration drilling, waste management, water conservation and pollution prevention must be implemented at all times.

- Compliance With Authorisations: All conditions of the General Authorisation, environmental management measures, and DWS requirements must be implemented in full, without exception.
- Environmental Awareness: All personnel involved in drilling activities must be informed of key environmental sensitivities, water resource protection measures and potential environmental impacts.
- Clear Closure Objectives: Rehabilitation and post-closure objectives must be defined, realistic and achievable to ensure that no long-term environmental footprint remains once drilling activities have ceased.
- Implementation of Mitigation Measures: All mitigation and management actions identified through the risk assessment (GN 509) must be applied rigorously to minimise the significance of predicted impacts.

6.3 Performance Objectives and Goals

Seriti is committed to upholding strong environmental performance across all phases of the exploration project. The goal is to ensure operations remain efficient while actively safeguarding the environment, particularly surface water and groundwater resources.

The performance objectives guiding water and waste management are outlined in Table 5-1.

Table 6-1: Performance Objectives

Aspect	Performance Objective
Water Quantity	Implement measures, monitoring programmes and operational controls to promote efficient and sustainable water use on site.
Water Quality	Ensure that drilling and associated activities do not degrade water quality, either directly or indirectly, during drilling, operation or decommissioning phases.
Waste Management	Implement processes to minimise waste generation and ensure that unavoidable waste does not pose a risk to water resources or the surrounding natural environment.

6.4 Measures to Achieve and Sustain Performance Objectives

The following measures will be implemented to ensure that the performance objectives outlined above are attained and continuously upheld:

- Implementation of Specialist Recommendations: All recommendations provided by hydrogeology, hydrology, wetland and environmental specialists, and approved by competent authorities, shall be incorporated into on-site management procedures.

- Compliance with Authorisation Conditions: All conditions stipulated in the General Authorisation and any related directives issued by the DWS must be adhered to.
- Adoption of Best Practice Guidelines: Industry recognised best practice guidelines for drilling, pollution prevention, waste handling and water conservation shall guide daily operations.
- Compliance with Legislation: All relevant legal provisions, including the National Water Act, NEMA, and associated regulations, shall be implemented throughout the project lifecycle.

Through these measures, Seriti aims to ensure that drilling operations are environmentally responsible, compliant and aligned with the principles of sustainable resource management.

The Environmental Management Plan (EMP) provides a framework to ensure that the proposed exploration drilling activities are planned and executed in an environmentally responsible manner. It sets out the mitigation measures, monitoring requirements, and management responsibilities necessary to prevent, minimise, and rehabilitate environmental impacts. The EMP applies across all phases of the project, planning, drilling operations, and decommissioning, and is designed to support compliance with applicable legislation, including the NWA, NEMA principles, and all associated regulatory requirements. The EMP also establishes procedures for monitoring, reporting, corrective action and ongoing environmental stewardship.

7 Environmental Management Plan (EMP)

7.1 Objectives of the EMP

The primary objective of the EMP is to ensure that environmental risks associated with the drilling programme are effectively managed throughout the project lifecycle. To achieve this, the EMP seeks to:

- prevent or minimise adverse environmental impacts arising from exploration drilling activities;
- ensure compliance with the National Water Act and all applicable environmental laws and authorisations;
- promote the sustainable use of natural resources, particularly water, soil and vegetation;
- guide the rehabilitation of disturbed areas to restore ecological structure, function and stability; and
- establish a clear framework for monitoring, reporting and continuous improvement.

7.2 Roles and Responsibilities

Successful implementation of the EMP requires clear allocation of responsibilities. Key roles include:

- The Project Manager, who carries overall responsibility for ensuring that the EMP is implemented and that all project activities comply with legal and environmental requirements. The Project Manager must ensure that mitigation measures, monitoring programmes and corrective actions are properly resourced.
- The Environmental Control Officer (ECO) is responsible for monitoring compliance on site, identifying deviations from the EMP, and recommending corrective and preventive actions. The ECO must maintain accurate records and conduct regular inspections during drilling.
- Contractors and subcontractors are required to adhere to all EMP provisions during their activities. They must ensure proper environmental conduct by their personnel and immediately report incidents or non-compliances.
- Stakeholders, including landowners and community representatives, may provide input regarding environmental concerns and participate in feedback or communication sessions facilitated by the EAP or applicant.

7.3 Environmental Management Actions

7.3.1 Pre-Construction Phase

During the pre-construction stage, environmental planning and preparation are essential. The applicant must secure all necessary approvals, including the GA for Section 21(c) and (i) water uses, and ensure that stakeholders are properly notified of upcoming activities. Baseline environmental surveys, including water quality sampling, wetland condition assessments and soil stability checks, must be completed to establish reference conditions against which future monitoring can be measured.

7.3.2 Construction Phase (Drilling Activities)

Environmental management during drilling focuses on controlling disturbance, preventing pollution and ensuring safe, responsible operations.

Site preparation must be limited to designated areas to avoid unnecessary habitat disturbance. Clearing of vegetation should be restricted to the drilling pad and access routes, relying on existing roads wherever feasible to reduce soil disturbance. If new access routes are unavoidable, their footprint should be kept to a minimum.

Protection of water resources is a priority. Erosion control measures, such as silt fences, berms, stormwater diversion channels or temporary sediment traps, must be installed where runoff risks exist. Spill kits should be available at all drilling locations, and procedures for handling hydrocarbons must be strictly followed to prevent soil and water contamination.

Waste generated during drilling must be managed responsibly. Drilling fluids and cuttings should be collected in lined, impermeable containment pits or tanks to prevent leaching. General and hazardous waste must be segregated, stored securely and disposed of at licensed facilities.

Air and noise emissions should be controlled by watering access roads to suppress dust and ensuring equipment is properly maintained to reduce noise. Drilling operations should be restricted to reasonable working hours (e.g., 07:00–17:00) to minimise nuisance to nearby receptors.

Biodiversity considerations include monitoring for wildlife presence and ensuring that no fauna is harmed during operations. Sensitive or protected plant species within or near the drilling area should be clearly marked and avoided.

7.3.3 Operation Phase

Once drilling is underway, environmental performance must be continuously monitored. Regular water quality sampling must be conducted upstream and downstream of the site to detect potential contamination. Wetlands must be inspected for changes in hydrology, vegetation cover and erosion. All environmental incidents, including spills, damage to sensitive habitats or exceedances of threshold values, must be recorded and reported promptly, accompanied by corrective actions.

7.3.4 Decommissioning and Rehabilitation Phase

Upon completion of drilling activities, all temporary infrastructure, including drill rigs, pipes, containers and waste storage facilities, must be removed from the site. Disturbed areas must be reshaped, stabilised and revegetated using indigenous plant species to restore ecological function and limit erosion. Rehabilitation measures should remain in place until vegetation is established and erosion risks have been fully addressed.

7.4 Monitoring Programme

Monitoring forms a critical part of the EMP to track the effectiveness of mitigation measures and to detect any emerging environmental risks.

7.4.1 Water Quality Monitoring

Water quality must be monitored for key indicators, including pH, turbidity, heavy metals, hydrocarbons and any other parameters recommended by specialists. Sampling should take place monthly during the drilling phase and continue for at least three months after drilling has ceased to ensure the site has stabilised.

7.4.2 Wetland Health Monitoring

Wetland monitoring should assess hydrological functioning, vegetation condition and soil stability. Indicators such as plant diversity, saturation levels and signs of erosion must be reviewed quarterly during operations and following completion of the project.

7.4.3 Noise and Air Quality Monitoring

Noise levels should be measured at sensitive receptors during drilling to ensure compliance with occupational and environmental standards. Dust levels must be monitored against PM_{10} and $PM_{2.5}$ thresholds to prevent air quality impacts on local communities and surrounding environments.

7.5 Emergency Preparedness

Emergency response protocols must be in place to address spills, fires and medical incidents. A spill response plan must be implemented, and personnel trained in spill containment and reporting. Fire-fighting equipment must be available on site, and staff must be trained in fire prevention and emergency response. First-aid kits must be accessible, and selected personnel must be trained in first aid to manage medical emergencies.

7.6 Reporting and Record Keeping

Comprehensive and transparent reporting is essential for demonstrating compliance. Monthly environmental monitoring reports must be compiled and submitted to the relevant authorities where required. Environmental incidents must be documented immediately, with corrective actions implemented and recorded within 24 hours. Rehabilitation actions and outcomes must be captured, including photographic evidence and monitoring results, as part of a final rehabilitation report.

7.7 Training and Awareness

Before commencement of drilling activities, all personnel must receive environmental awareness training. Training should emphasise the protection of water resources, responsible waste management, biodiversity conservation and safe working procedures. Continuous refresher training may be required where risks or personnel responsibilities change.

8 Conclusion

The proposed exploration drilling programme within the Albion North Section of MMS forms part of Seriti Power's ongoing resource quantification activities within an already authorised mining right area. The technical assessment undertaken for this GA application demonstrates that the activity is temporary, small in physical footprint, and confined to a landscape that has already been subject to extensive historical and contemporary mining and agricultural disturbance.

Wetland and watercourse assessments confirm that the affected HGM units are generally in a Moderately to Seriously Modified ecological condition, with Moderate Ecological Importance and Sensitivity. Although several boreholes fall within 500 m of delineated wetland features, none of the drilling positions occur within wetland channels, and no permanent infrastructure will be established within watercourses. Potential impacts are thus limited in extent and duration.

The application of the GN 509 Risk Assessment Matrix indicates that, before mitigation, risks are within the Moderate range, primarily due to the sensitivity of wetland habitat and risks associated with access, soil disturbance, and potential hydrocarbon spills. With the implementation of the recommended mitigation measures, such as strict access control, use of existing tracks, lining of sumps, spill prevention protocols, erosion control, and rehabilitation of disturbed areas, all residual risks reduce to the Low category. These outcomes fall squarely within the threshold envisaged under the GA for Section 21(c) and 21(i) water uses.

The EMP and Water and Waste Management Framework developed for this project provide clear, practical measures to avoid pollution, conserve water, prevent habitat degradation and ensure full rehabilitation of borehole sites. Monitoring, reporting and corrective actions have also been clearly defined to support compliance and adaptive management.

Based on the findings of this technical assessment, no fatal flaws or high-significance risks have been identified that would preclude the proposed drilling activities from proceeding under the GA framework. The project is considered low risk, manageable, and consistent with sustainable water resource protection, provided that all mitigation, monitoring, and rehabilitation measures are rigorously implemented.

It is therefore concluded that the proposed MMS Albion North resource quantification drilling programme meets the requirements of the NWA and GN 509, and is suitable for authorisation under the GA for Section 21(c) and (i) water uses, subject to the standard conditions issued by the Department of Water and Sanitation.

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Appendix A: Specialist CVs

Vumile Ribeiro

Director, Principal Environmental Consultant and Community Health Expert
Registered EAP No. 2019/1183

Address: 28 Shamrock Street, Ferndale Ext 3, Randburg 2194, Johannesburg
Email: vumile@niara.co.za
Contact No: +27 82 767 2786

EDUCATION AND QUALIFICATIONS

- BSocSc. (Geography and Environmental Management) University of KwaZulu Natal (2007)
- BSocSc. Hons. (Environmental Analysis and Management) University of Pretoria (2011)
- MPhil. (Environmental Law) University of Pretoria (current)

AFFILIATIONS

- Environmental Assessment Practitioners Association of South Africa (EAPASA)
- International Association of Impact Assessment South Africa (IAIASA)
- Public Health Association of South Africa (PHASA)
- Society of South African Geographers (SSAG)
- National Association for Clean Air (NACA)

YEARS OF EXPERIENCE

- 17 years

KEY COMPETENCIES

- Project Management
- Health Impact Assessments
- Community Health, Environmental Health

BIOGRAPHY

Vumile Ribeiro is the Director of Environmental Management Services at Niara Environmental Consultants (Pty) Ltd. Vumile has 18 years of professional and international experience in Environmental Assessment and Management primarily in the minerals resources and energy sector. Her roles include the operational management responsibilities of Niara Environmental Consultants, project management, report writing, client liaison, as well as business development.

Having worked for a multi-disciplinary advisory firms and environmental consultancies, Vumile has a competent understanding of the work effort and cross collaboration required for a successful multidisciplinary organisation. Vumile has been involved in a number of Environmental Impact Assessments and has a particular interest in health impacts assessments, water resource management, mining, energy and stakeholder engagement. Vumile has considerable experience across a range of developmental and environmental sciences and has worked in South Africa, Mozambique, Sierra Leone and Liberia and is familiar with Regulatory Environmental Legislation in other parts of Africa.

Vumile is very well versed in the IFC Environmental and Social Performance Standards (including IFC PS 2012) and the associated Equator Principles, which have informed the approach and standard for a number of ESIA processes that she has been involved in. Vumile is skilled at organising and driving effective project teams at a scale relevant to the project's requirements. She has technical experience and is able to quickly identify the most pertinent issues of a particular project whilst focussing on driving project success by rigorously implementing project management tools. Vumile's special interest areas involves understanding the systemic nature of factors that pose threats and opportunities in terms of establishing healthy, resilient communities, and exploring the use of various data types, approaches and methodologies to enable effective change.

- Legal Compliance Audits: Environmental / Health & Safety
- Environmental Control Officer
- Performance Assessments (Environmental Audits) on mine EMPrs
- Compliance Audits on Environmental Authorisations (e.g., ROD's, Water, Air and Waste Licenses)
- Consolidated Compliance Programmes
- Environmental Impact Assessments
- Basic Assessment Reports
- Mineral Law -Mining Rights and Permits
- Environmental Authorisation Applications
- Water Use License Applications
- Waste Management License Applications
- Co-ordinating and conducting Public Involvement processes.
- Social Assessment (Stakeholder and Social Analysis)
- Public Participation Process and Stakeholder consultation and mediation

COUNTRIES OF WORK EXPERIENCE

- Cameroon
- Democratic Republic of Congo
- Liberia
- Mozambique
- Sierra Leone
- South Africa
- Tanzania
- Zambia

LANGUAGES

English (excellent), Afrikaans (intermediate), siSwati (excellent), isiZulu (excellent) and Xhosa (excellent)

EMPLOYMENT HISTORY

June 2017 – present: Director: Environmental Management Services, Niara Environmental Consultants

March 2012 – May 2017: Environmental Consultant Human Sciences Department, Digby Wells Environmental, South Africa

January 2010 – December 2010: GIS Technician, Niara Environmental Consultants

October 2008 – October 2009: Client Service Executive, Ernst & Young

July 2007 – August 2008: GIS technician Capturer, Geospace International, (City of Tshwane Public Works and Infrastructure Development Department: Roads and Storm Water Division Project.)

April 2007 – July 2007: Mineral information Management Intern Department of Minerals and Energy, Mpumalanga Regional Office

EXPERIENCE HIGHLIGHTS

The below highlight key recent and relative project experience:

- Environmental Authorisation for Klipspruit Colliery – Inclusion of Pits S & G and Water Use License Application Process, Seriti Power (Pty) Ltd: Project Manager; Stakeholder Engagement Specialist
- Environmental Authorisation Application for The Springfield Colliery, Redan Siding and Vlakfontein Coal Mining Projects by Glubay Coal (Pty) Ltd in The District of Vereeniging and Meyerton, Gauteng: Health Impact Assessments and Social Impact Assessments: Social and Health Specialist and Reports Writer
- Graphit Kropfmühl - Community Impact Assessment for the GK Ancuabe Graphite Mine Graphit Kropfmühl Ancuabe Graphite Mine SA, Cabo Delgado Province Mozambique: Health Specialist and Report Writer
- Health Impact Assessment for the Mining Right Application for Iron Ore for Muhlava Mining on the Farms Berlyn 670 LT and Keulen 669 LT in Tzaneen, Limpopo Province, Titanium Mining (Pty) Ltd, Republic of South Africa: Health Specialist and Report Writer
- Nkomati Mine Closure Project: Community and Occupational Health Assessment Nkomati Joint Venture – a partnership between African Rainbow Minerals Limited and Norilsk Nickel Africa (Pty) Limited (Nkomati Mine
- Scoping EIA, Water Use License Application, Waste Management Licence Application for the Sasol Sigma Colliery Underground Ash Backfilling Project Sasol Mining (Pty) Ltd Republic of South Africa: Project Manager

Please consult the attached appendix for a comprehensive list detailing the project experiences undertaken.

APPENDIX A: PROJECT EXPERIENCE

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2012	Scoping EIA and Water Use License Application for the Bokoni Platinum Mine: Klipfontein Opencast Mining Operation	Bokoni Platinum Mines (Pty) Ltd Republic of South Africa	Project Administrator
2012	Amendment to City Deep EIA/EMP for the inclusion of Dump 3/L/40 and 3/L/42	Ergo Mining (Pty) Ltd Republic of South Africa	Project Assistant
2012	Community Health Baseline Study for Tonguma	Koidu Holdings Sierra Leone	Project Assistant / Report Writer
2012-2013	Community Health Impact Assessment for the Cooke Uranium Project re-mining of historic tailings facilities and establishment of a single large new Tailings Storage Facility for residual tailings	Gold One International Ltd Republic of South Africa	Health Specialist / Report Writer
2012-2013	Water Use Licence Compliance Audit	Ergo Mining (Pty) Ltd Republic of South Africa	Project Administrator
2013	Community Health Impact assessment for the Vedanta Power Plant and Associated Transmission Lines	Vedanta Zinc International Republic of South Africa	Health Specialist / Report Writer
2013	Community Health Impact Assessment for the Balama Graphite Mine	Syrah Resources Mozambique	Health Specialist / Report Writer
2013	Community Health Impact Assessment for the Putu Iron Ore Project	Atkins Global, Grand Gedeh County, Liberia	Project assistant for Health Impact Assessment
2013	Prospecting Right Application and Environmental Management Program Compilation for the St. Agnesfontein	Glenover Phosphate (Pty) Ltd / FermineOre, Republic of South Africa	Project Administrator
2013-2014	Scoping EIA, Water Use License Application, Waste Management Licence Application for the Sasol Sigma Colliery Underground Ash Backfilling Project	Sasol Mining (Pty) Ltd Republic of South Africa	Project Manager
2013-2014	Basic Assessment Report, Scoping EIA, Water Use License Application for the Sasol Syferfontein Block 4 Expansion Project	Sasol Mining (Pty) Ltd Republic of South Africa	Project Administrator
2013-2014	Community Health Impact Assessment for the Platreef underground platinum mine operation	Platreef Resources (PTY) Ltd Republic of South Africa	Health Specialist / Report Writer
2014	Submission of revised Environmental Impact Assessment and Environmental Management Programme for the Trichardtsfontein Project	Glencore Operations South Africa (Pty) Ltd, Republic of South Africa	Project Administrator / Report Co-author

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2014	Amendment to the Nooitgedacht Environmental Impact Assessment and Environmental Management Programme: Inclusion of Seams 2 and 4	Glencore Operations South Africa (Pty) Ltd, Republic of South Africa	Project Administrator / Report Co-author
2014	Community Impact Assessment for the proposed Kamiesberg heavy mineral sands mine Project	Zirco Roode Heuwel (Pty) Ltd Republic of South Africa	Health Specialist / Report Writer
2014	Community Impact Assessment for the proposed Tenge Iron Ore Project	Capitol Resources Limitada –subsidiary of Baobab Resources Plc, Mozambique	Health Specialist / Report Writer
2015	Integrated Water Use Licence Application and Integrated Waste Water Management Plan for the proposed Klipspruit Extension: Weltevreden	BHP Billiton Energy Coal South Africa Limited, Republic of South Africa	Project assistant for the WULA and IWWMP
2015	Integrated Water Use Licence Application for the proposed Middelburg – Mhluzi Powerline Project	Eskom SOC Holdings Limited Republic of South Africa	Project Manager / Report Writer for the WULA
2015	Community Health Impact Assessment for the proposed open-pit magnetite mine and concentrator plant	Pamish Investments No. 39 (Pty) Ltd Republic of South Africa	Health Specialist / Report Writer
2015	Environmental and Social Impact Assessment for the Proposed Nachu Graphite Project	Magnis Resources T/A Uranex Tanzania Ltd, Ruangwa District, Lindi Region Tanzania, East Africa	Health Impact Assessment Report Reviewer
2015	Integrated Water Use Licence Application and Integrated Waste Water Management Plan for the Lanxess Chrome Mine	Lanxess Mining (Pty) Ltd Republic of South Africa	Report Writer for the WULA and IWWMP
2015	De Groote Boom Mining Permit Application: Prescribed Environmental Management Programme	De Groote Boom Minerals (Pty) Ltd Republic of South Africa	Project Administrator and Report Writer
2015	Environmental Impact Assessment and Environmental Management Programme Report for the Proposed Realignment of the P141-1 Provincial Road, Tweefontein Mine Complex, Mpumalanga Province	Glencore Operations South Africa (Pty) Ltd	Report Compiler
2015	Water Use Licence Application for the Proposed Realignment of the P141-1 Provincial Road, Tweefontein Mine Complex, Mpumalanga Province	Glencore Operations South Africa (Pty) Ltd, Republic of South Africa	Report Writer for the WULA and IWWMP

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2015	Community Impact Assessment for the GK Ancuabe Graphite Mine	Graphit Kropfmühl Ancuabe Graphite Mine SA, Cabo Delgado Province Mozambique	Project Manager / Health Specialist / Report Writer
2015	Water Use Licence Application for the Proposed Roodekop Wetland Offset and Compensation Strategy Project	Universal Coal Development IV (Pty) Ltd Republic of South Africa	Report Writer for the WULA and IWWMP
2015	Water Use Licence Application for the proposed Lambda Substation near Volksrust, Mpumalanga and Associated 2 x 400kV & 2 x 765kV Loop in Transmission Line Project	Eskom SOC Holdings Limited Republic of South Africa	Project Manager
2016	Klipspruit Extension: Motivation for The Drilling Of Exploration Holes Within A Wetland	South32 Sa Coal Holdings (Pty) Ltd	Project Administrator / Report Writer
2016	Namane Generation Independent Power Producer and Transmission Line Project, near Lephalale, Limpopo	Namane Generation (Pty) Ltd	Health Specialist
2016	Risk Assessment and Associated General Authorisation for the Proposed KPSX Northern Bypass, in Mpumalanga	South32 SA Coal Holdings (Pty) Limited	Project Manager and Report Writer
2016	Environmental and Social Impact Assessment for the Massawa and Sofia Gold Project, Senegal	Randgold Resources Limited	Health Specialist
2016	Proposed Reclamation of the Grootvlei Tailings Storage Facilities Cluster, near Springs, Gauteng	Ergo Mining (Pty) Ltd Republic of South Africa	Health Specialist
2017	Environmental and Social Impact Assessment for the Proposed Ntem Iron Ore Project, in Cameroon: Health Impact Assessment Report	Caminex SA, Cameroon	Health Specialist
2017	Water Use Licence for the Proposed Pit H and Associated Infrastructure at KPSX: Weltevreden and KPSX: South Operations, in Mpumalanga	South32 SA Coal Holdings (Pty) Limited, Republic of South Africa	Project Manager and Report Writer
2017	Risk Assessment and Associated General Authorisation for the Proposed Substation and 132kV Power Lines in Ogies, Mpumalanga	Eskom Holdings SOC Limited, Republic of South Africa	Project Manager and Report Writer
2017	Wetlands Risk Assessment and Associated General Authorisation for the Proposed Geotechnical Drilling Project at Khutala Colliery, in Mpumalanga	South32 SA Coal Holdings (Pty) Limited, Republic of South Africa	Project Manager and Report Writer

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2017	Community Health Impact Assessment for the Proposed Phase 2 KwaMathukuza Housing Development in KwaMathukuza, Newcastle, KwaZulu-Natal	Phumaf Consulting Engineers, Republic of South Africa	Project Manager and Report Writer
2017	Odour Survey / Assessment for the Proposed Phase 2 KwaMathukuza Housing Development in KwaMathukuza, Newcastle, KwaZulu-Natal	Phumaf Consulting Engineers, Republic of South Africa	Project Manager and Report Writer
2017	Health Impact Assessment for the Mining Right Application for Iron Ore for Muhlava Mining on the Farms Berlyn 670 LT and Keulen 669 LT in Tzaneen, Limpopo Province	Titanium Mining (Pty) Ltd, Republic of South Africa	Project Manager and Report Writer
2017	Emakhazeni Coal Mining Project in the Eastern Basin Coalfield, Mpumalanga Province	Umsimbithi Mining (Pty) Ltd, Republic of South Africa	Health Specialist
2017	Odour Impact Survey for the Proposed Phase 2 KwaMathukuza Housing Development in KwaMathukuza, Newcastle, KwaZulu-Natal	Phumaf Consulting Engineers, Republic of South Africa	Project Manager and Report Writer
2018	Renewal of an Existing Integrated Water Use License for Vlakfontein Mine: Central Block, Ogies in Mpumalanga Province	African Exploration Mining and Finance Corporation SOC Limited (AEMFC)	Project Manager and Report Writer
2018	2017 IWWMP Update and Amendment for Eskom Lethabo Power Station in Free State	Eskom Holdings SOC Limited	Project Manager and Report Writer
2018	East Block External Integrated Water Use License Audit at Vlakfontein Mine, Ogies in Mpumalanga Province	African Exploration Mining and Finance Corporation SOC Limited (AEMFC)	Project Manager and Report Writer
2018	Waste Management License Application for NN Metals proposed listed activities of the scrap metal recycling operation located at 300 Mundt Street on Waltloo township ERF 110 in Pretoria within the City of Tshwane Metropolitan Municipality	NN Metals (Pty) Ltd, Pretoria, Republic of South Africa	Project Manager and Report Writer
2018	Community Health Impact Assessment for The Development of the Proposed Leslie 1 Coal Mining Project, near Leandra, Mpumalanga Province	Anglo Operations (Pty) Ltd and Leslie Coal Mine (Pty) Ltd	Health Specialist
2018	The Development of the Proposed Transformer Manufacturing, Repairing and Testing Facility at Portion 189 of the Farm Zandfontein 317JR, Kirkney Industrial Township, Pretoria West: Health Impact Assessment	Contipower (Pty) Ltd	Health Specialist

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2018	Elandsfontein Colliery: Oosbank Coal Siding Draft Environmental Management Programme	Anker Coal, Elandsfontein Colliery (Pty) Ltd	Project Manager and Report Writer
2018	Elandsfontein Colliery (Pty) Ltd: Elandsfontein Mine Integrated Water and Waste Management Plan Annual Update: 2018	Anker Coal, Elandsfontein Colliery (Pty) Ltd	Project Manager and Report Writer
2018	Rehabilitation, Decommissioning and Mine Closure Plan for the Proposed Woestalleen Holdings (Pty) Ltd Coal Mine in Middelburg, Mpumalanga Province	Woestalleen Holdings (Pty) Ltd	Project Manager and Report Writer
2019	Elandsfontein Colliery: Performance Assessment Audit Report on MP 63 MR Environmental Management Programme	Anker Coal, Elandsfontein Colliery (Pty) Ltd	Project Manager and Report Writer
2019	Community Health Impact Assessment The Development of the Proposed Matai Mining Project in Mankwe District, North West Province	Matai Mining (Pty) Ltd	Project Manager and Report Writer
2019	Social Impact Assessment The Development of the Proposed Matai Mining Project in Mankwe District, North West Province	Matai Mining (Pty) Ltd	Project Manager and Report Writer
2019	Health Impact Assessment Report The Development of the Proposed Panfontein Mining Project in the Magisterial District of Vereeniging, Gauteng Province	Richtrau 253 (Pty) Ltd	Project Manager and Report Writer
2019	Socio-economic Impact Assessment Report The Development of the Proposed Panfontein Mining Project in the Magisterial District of Vereeniging, Gauteng Province	Richtrau 253 (Pty) Ltd	Project Manager and Report Writer
2019	Elandsfontein Colliery (Pty) Ltd: Elandsfontein Mine Integrated Water and Waste Management Plan and RSIP Annual Update: 2019	Anker Coal, Elandsfontein Colliery (Pty) Ltd	Project Manager and Report Writer
2019	Vlakfontein Colliery Financial Provision Assessment: 2019	African Exploration Mining and Finance Corporation (SOC) Ltd (AEMFC)	Project Manager and Report Reviewer
2019	Inyanda Coal Mine Integrated Water and Waste Management Plan Update: 2019	Inyanda Mining Holdings (Pty) Ltd	Report Writer

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2019	Inyanda Coal Mine Rehabilitation Strategy and Implementation Plan	Inyanda Mining Holdings (Pty) Ltd	Report Writer
2019	Health Risk Assessment for The Proposed Residential Development on Various Portions of The Farm Rooikoppies 297-JQ	Seaton Thomson and Associates Cc	Specialist and Report Writer
2019	Application for Environmental Authorisation and A Change of Land Use for the Proposed Musina-Makhado Special Economic Zone (SEZ) in the Limpopo Province Health Impact Assessment Report	Limpopo Economic Development Agency (LEDA)	Specialist and Report Writer
2019	Integrated Environmental Authorisation Process for the Proposed Weltevreden Mining Right Application, Socio-economic Impact Assessment Report	Saldomate (Pty) Ltd	Specialist and Report Writer
2019	Integrated Environmental Authorisation Process for the Proposed Wildebeestfontein Mining Right Application, Socio-economic Impact Assessment Report and Social and Labour Plan	Opsirex (Pty) Ltd	Specialist and Report Writer
2020	Proposed Aggregate and Gravel Mining in Bizana, Eastern Cape: Social and Labour Plan	Ilitye Industrial (Pty) Ltd	Specialist and Report Writer
2020	Integrated Water Use Licence Application and IWWMP: Inyanda Coal Mine Rehabilitation Strategy and Implementation Plan	Inyanda Mining Holdings (Pty) Ltd	Report Writer
2020	Integrated Water Use Licence Application and IWWMP: The Development of the Proposed Panfontein Mining Project in the Magisterial District of Vereeniging, Gauteng Province	Richtrau 253 (Pty) Ltd	Project Manager and Report Writer
2020	Integrated Environmental Authorisation Process for the Proposed Van Oudshoornstroom Mining Right Application: Socio-economic Impact Assessment Report	Estate Late Philippus Christoffel Johannes De Jager	Specialist and Report Writer
2020	Nkomati Mine Closure Project: Community and Occupational Health Assessment	Nkomati Joint Venture – a partnership between African Rainbow Minerals Limited and Norilsk Nickel Africa (Pty) Limited (Nkomati Mine	Specialist and Report Writer
2020	Social Impact Assessment Report for the Development of the Proposed Zelpy Kafferskraal Mining Right Application	Zelpy Gold Mine (Pty) Ltd	Specialist and Report Writer

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2020	Health Impact Assessment Report for the Development of the Proposed Zelpy Kafferskraal Mining Right Application	Zelpy Gold Mine (Pty) Ltd	Specialist and Report Writer
2020	Environmental Authorisation and Water Use Licence Application for The Electrisurv Cc Beneficiation Plant	Electrisurv Surveying CC	Project Manager and Reports Writer
2020	Mining Right Application of the Proposed Springfield Opencast Colliery, near Meyerton & Vereeniging in the Gauteng Province: Health Impact Assessment	Glubay Coal (Pty) Ltd, an affiliated company of Canyon Resources (Pty) Ltd	Specialist and Report Writer
2020	Koppie Canyon Mining Right Application near Hendrina, Mpumalanga: Social Impact Assessment Report and Social and Labour Plan	Canyon Resources (Pty) Ltd	Specialist and Report Writer
2020	Risenga Colliery Water Use Licence Application: Integrated Water and Waste Management Plan	SARMCO Group (Pty) Ltd	Project Manager and Report Writer
2021	Integrated Water and Waste Management Plan (IWWMP) for the Proposed Samara Prospecting Right near Barkley West, Northern Cape	Samara Mining (Pty) Ltd	Specialist and Report Writer
2021	Social Impact Assessment Report and Social and Labour Plan for the Development of the Lakeside Colliery S102 Amendment	Zomhlaba Resources (Pty) Ltd	Specialist and Report Writer
2021	Social Impact Assessment Report and Social and Labour Plan for the Development of the Leeuwfontein Colliery S102 Amendment	Zomhlaba Resources (Pty) Ltd	Specialist and Report Writer
2021	Health Impact Assessment Report for the Development of the Proposed Ericure Dannhauser Coal Project	Ericure (Pty) Ltd	Specialist and Report Writer
2021	Application for Environmental Authorisation and Water Use Licence Application for the Proposed Middelburg Mining Services (MMS) Boschmanskrans Section Implementation of Wetland Mitigation and Offset Strategy: Social Impact Assessment	South32 SA Coal Holdings (Pty) Limited: South Africa Energy Coal	Specialist and Report Writer
2021	Application for General Authorisation: Ifalethu Colliery, Middelburg, Mpumalanga	South32 SA Coal Holdings (Pty) Limited: South Africa Energy Coal	Specialist and Report Writer

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2021	Application for Environmental Authorisation and Water Use Licence Application for the Proposed Middelburg Mining Services (MMS) Boschmanskrans Section Implementation of Wetland Mitigation and Offset Strategy: Water Use Licence Application	South32 SA Coal Holdings (Pty) Limited: South Africa Energy Coal	Specialist and Report Writer
2021	Social Impact Assessment for the Proposed Farm Marsh Lusern and Hydroponics Systems Project: Social Impact Assessment	Sishen Iron Ore Company (Pty) Ltd	Specialist and Report Writer
2021	Environmental Regulatory Process Required for the Proposed Wolvekrans Colliery Boschmanskrans Section Mining Extension Project Wetland Mitigation and Offset Strategy near Middelburg, Mpumalanga	South32 SA Coal Holdings (Pty) Ltd	Project Manager
2021	Water Use Licence Application for the Proposed Wolvekrans Colliery Boschmanskrans Section Mining Extension Project Wetland Mitigation and Offset Strategy	South32 SA Coal Holdings (Pty) Ltd	Specialist and Report Writer
2021	Social Impact Assessment for the Proposed Wolvekrans Colliery Boschmanskrans Section Mining Extension Project Wetland Mitigation and Offset Strategy	South32 SA Coal Holdings (Pty) Ltd	Specialist and Report Writer
2021	Environmental Impact Assessment and IWUL for the Proposed Ikwezi Vanadium Mine, near Northam	Ikwezi Mining (Pty) Ltd	Project Manager
2021	Social Impact Assessment and IWUL for the Proposed Ikwezi Vanadium Mine, near Northam	Ikwezi Mining (Pty) Ltd	Specialist and Report Writer
2021	Integrated Environmental Authorisation Process for The Proposed Aangewys Coal Mine Mining Right Application: Social Impact Assessment	National Treasure Minerals (Pty) Ltd	Specialist and Report Writer
2021	Social and Labour Plan for The Proposed Straffontein Colliery Mining Right Application	Mnambithi Mining (Pty) Ltd	Specialist and Report Writer
2021	Integrated Environmental Authorisation Process for The Proposed Straffontein Colliery Mining Right Application: Social Impact Assessment	Mnambithi Mining (Pty) Ltd	Specialist and Report Writer
2021	Environmental Authorisation and Water Use Licence Application for The Construction of the Doornpoort Pumping Main and Pump Station Project	eMalahleni Local Municipality	Project Manager and Report Writer
2021	Environmental Audit Report for Sekoko Coal – 2021	M3P Mining (Pty) Ltd	Project Manager

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2021	Environmental Authorisation required for Prospecting Right Application on various Portions of the Farm Schaapkopje 194 HT, 5km North of Vryheid Town in the AbaQulusi Local Municipality, KwaZulu Natal	Tuutuuka Resources (Pty) Ltd	Project Manager and Report Writer
2021	Basic Assessment Process and Water Use Licence Application for the Alignment of the Klipspruit Colliery Environmental Management Programme for Klipspruit Colliery, Mpumalanga Province	Seriti Power (Pty) Ltd	Project Manager and Report Writer
2022	Social and Labour Plan for The Proposed Roodepoort Coal Mine	Roodepoort Coal (Pty) Ltd	Specialist and Report Writer
2022	Social Impact Assessment for The Proposed Roodepoort Coal Mine on Farm Roodepoort 40 Is Portion 15, Nkangala District Municipality Within the EMalahleni Local Municipality, Mpumalanga Province	Roodepoort Coal (Pty) Ltd	Specialist and Report Writer
2022	Social and Labour Plan for Kleinwater Colliery	Madini Mining (Pty) Ltd	Specialist and Report Writer
2022	Social Impact Assessment for the Section 102 Amendment in Respect of Portions 2, 8, 9 of the Farm Kleinwater 301 JS, Portions 11, 39, 40 Of the Farm Doornrug 302 JS, and the Remaining Extent of the Farm Rondebult 303 JS, eMalahleni Local Municipality, Mpumalanga	Madini Mining (Pty) Ltd	Specialist and Report Writer
2022	Health Impact Assessment for the Proposed Nellmapius Extension 26 Township on Various Portions of The Farm Hatherley 331 JR, City of Tshwane Metropolitan Council	Tambura 69 Trust	Specialist and Report Writer
2022	Environmental Impact Assessment (EIA) and Water Use Licence Application for The Grootlaagte Opencast Mine Mining Right Application Situated in The Steve Tshwete Local Municipality, Nkangala District Municipality in Mpumalanga	Arnot OpCo (Pty) Ltd	Project Manager and Report Writer
2022	Basic Assessment Process and Water Use Licence for The Proposed Upgrade of Weltevreden Wetland Interventions	Seriti Power (Pty) Ltd	Project Manager and Report Writer
2022	Social Impact Assessment for the Blesboklaagte S102 EA IWUL and WL	Eyethu Coal (Pty) Ltd	Specialist and Report Writer
2022	Environmental Authorisation for Klipspruit Colliery - Pit H: Regulation 31 Amendment and Water Use License Application	Seriti Power (Pty) Ltd	Project Manager and Report Writer

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2022	Social Impact Assessment for the proposed Wonderhoek Open Cast Coal Mine near Middelburg, Mpumalanga Province	Wonderhoek Colliery (Pty) Ltd	Specialist and Report Writer
2022	Community Health Impact Assessment for the proposed Interwaste Brakkefontein Waste Management Facility near Atlantis, Western Cape	SLR Consulting on behalf of Interwaste (Pty) Ltd	Specialist and Report Writer
2022	Community Health Impact Assessment for the proposed Wonderhoek Open Cast Coal Mine near Middelburg, Mpumalanga Province	Wonderhoek Colliery (Pty) Ltd	Specialist and Report Writer
2022	Community Health Impact Assessment for the proposed Schurvekop Underground Coal Mine near Bethal in Mpumalanga	Mmakau Coal (Pty) Ltd	Specialist and Report Writer
2022	Public Participation Process in Support of the Queenstown Quarry S102 Amendment Process, Eastern Cape	Raumix Aggregates, a subsidiary of Raubex Group Ltd	PPP and Stakeholder Engagement Specialist
2022	Community Health Impact Assessment for the proposed Arengo Iron-Ore Project	Arengo 297 (Pty) Ltd	Specialist and Report Writer
2022	Water Use Licence Application and Associated Specialist Studies for the proposed Idwala Coal Mine	Idwala Coal Mine (Pty) Ltd	Specialist and Report Writer
2022	Rapid Appraisal Health Impact Assessment for the Proposed Platinum Pride Crematorium in Cape Town	Sharples Environmental Services cc (SES)	Specialist and Report Writer
2022	Rapid Appraisal Health Impact Assessment for the Proposed Construction and Operation of a Cement Grinding Facility and Storage of Dangerous Goods Located in Blackheath Within the City of Cape Town Municipality	Cemza Coastal (Pty) Ltd	Specialist and Report Writer
2022	Environmental Authorisation for Klipspruit Colliery – Inclusion of Pits S & G and Water Use License Application Process	Seriti Power (Pty) Ltd	Project Manager; Stakeholder Engagement Specialist
2022-2023	ZNT 03 EDTEA 2021/2022 KwaZulu-Natal Air Quality Management Plan Draft Air Quality Management Plan – Provincial Stakeholder Engagement / PPP	Kwazulu-Natal: Department of Economic Development, Tourism and Environmental Affairs	PPP and Stakeholder Engagement Specialist

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2023	Community Health Impact Assessment for the proposed Holfontein Waste Management Facility Expansion Project	EnviroServ Waste Management (Pty) Ltd	
2023	Social Impact Assessment for the Proposed Highbury Mining Right Application in the Magisterial District of Port Shepstone in the Ray Nkonyeni Local Municipality, KwaZulu Natal Province	SA Lithium (Pty) Ltd	Specialist and Report Writer
2023	Environmental Authorisation Process for the proposed Pivaanspoort Prospecting Right Application in Vryheid, KwaZulu-Natal	Pivaanspoort Mining (Pty) Ltd	PPP and Stakeholder Engagement Specialist
2023	Rapid Appraisal Health Impact Assessment for the Proposed Housing Development on Erf 43937 in Colorado Park, Mitchell's Plain	The City of Cape Town (CoCT) Metropolitan Municipality	Specialist and Report Writer
2023	Health Impact Assessment for the Proposed Highbury Mining Right Application in the Magisterial District of Port Shepstone in the Ray Nkonyeni Local Municipality, KwaZulu Natal Province	SA Lithium (Pty) Ltd	Specialist and Report Writer
2023	Public Participation Process for the proposed Wonderhoek Open Cast Coal Mine near Middelburg, Mpumalanga Province	Wonderhoek Colliery (Pty) Ltd	PPP and Stakeholder Engagement Specialist
2023	Environmental Authorisation Application for The Vlakfontein Coal Mining Project by Glubay Coal (Pty) Ltd in The District of Vereeniging and Meyerton, Gauteng: Health Impact Assessment	Glubay Coal (Pty) Ltd	Specialist and Report Writer
2023	Community Health Impact Assessment for the Proposed Multisand General Waste Management Facility Project	Multisand (Pty) Ltd	Specialist and Report Writer
2023	Seriti MMS Environmental Management Programme (EMPr) Consolidation	Seriti Coal (Pty) Ltd	Project Manager and Report Writer
2023	Randfontein Estates Limited: Doornkop Underground Mining Operations Water Use Licence Application (WU29548) and Associated Specialist Studies	Randfontein Estates Limited (a subsidiary of Harmony Gold Mining Company Limited)	Project Manager, Report Compiler and Reviewer
2023	Klipspruit Extension EIA and WUL: Alignment from opencast to underground	Seriti Coal (Pty) Ltd	Project Manager, Report Compiler and Reviewer

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2023	Integrated Environmental Authorisation Process for the Proposed Coastal Fuels: Alkmaar Mining Right Application: Social Impact Assessment	Coastal Fuels	Specialist and Report Writer
2023	Environmental Authorisation Application for The Redan Siding Project by Glubay Coal (Pty) Ltd in The District of Vereeniging and Meyerton, Gauteng: Health Impact Assessment	Glubay Coal (Pty) Ltd	Specialist and Report Writer
2023	Environmental Services for the Upgrade of N11 Section 3 from Newcastle South (KM 50.00) to Ncandu River (KM 57.20) in KwaZulu-Natal Province: Socio-Economic Impact Assessment	South African National Roads Agency SOC Ltd	Specialist and Report Writer
2023	Health Impact Assessment for the Proposed Manganese Slag Processing Plant and Associated Infrastructure in eMalahleni,	Zonglin Resources (Pty) Ltd	Specialist and Report Writer
2023	Community Health Impact Assessment for the Shiva Uranium Mine in the North West Province	Industrial Development Corporation of South Africa Limited (IDC)	Specialist and Report Writer
2023	Health Impact Assessment for the Proposed Samancor TC Smelter Plant: Addition of Two 70 MW Furnaces	Samancor Terris Chrome Smelters Ltd (Pty)	Specialist and Report Writer
2023	Environmental Control Officer Services for Water Conservation and Demand Management in Standerton	Gert Sibande District Municipality	Specialist and Report Writer
2023	Community Health Impact Assessment for the proposed for the proposed Orkney Wize Decline Project in Orkney, North West Province	China Africa Precious Metal (Pty) Ltd	Specialist and Report Writer
2024	Social Impact Assessment for the proposed Bengwenyama Underground Mining Project in the Sekhukhune District Municipality, Limpopo	Miracle Upon Miracle Investments (Pty) Ltd	Specialist and Report Writer
2024	Social Impact Assessment for the Proposed the Development of Coal Mine within Abaqulusi Local Municipality of Zululand District Municipality, KwaZulu Natal Province	Amora Properties (Pty) Ltd	Specialist and Report Writer
2024	External Environmental Audits for MMS (EMPRs, WULS, and WML Audits)	Seriti Power (Pty) Ltd	Specialist and Report Writer
2024	Seriti MMS General Authorisation for Exploration Drilling on Portions 15 and 16	Seriti Power (Pty) Ltd	Specialist and Report Writer

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2024	Social Impact Assessment Study for the proposed Palmietfontein Mining Right Application, in the Moses Kotane Local Municipality	Palm Chrome (Pty) Ltd	Specialist and Report Writer
2024	Social Impact Assessment Study for the Izimbiwa Coal Banana Republic (Rietfontein Colliery) S102 Amendment Process, near Middelburg, Mpumalanga	Izimbiwa Coal (Pty) Ltd	Specialist and Report Writer
2024	Social Impact Assessment Study for the Izimbiwa Coal Townlands (Uitkyk Colliery) S102 Amendment Process, near Middelburg, Mpumalanga	Izimbiwa Coal (Pty) Ltd	Specialist and Report Writer
2024	Social and Labour Plan for the proposed Palmietfontein Mining Right Application, in the Moses Kotane Local Municipality	Palm Chrome (Pty) Ltd	Specialist and Report Writer
2024	Social Impact Assessment for the proposed Samancor Western Chrome Mine, near Mooinooi, in the North West Province	Samancor Chrome (Pty) Ltd	Specialist and Report Writer
2024	Social Impact Assessment for the Ivanplats Application for Integrated Environmental Authorisation for the proposed Dry Stack TSF Project	Ivanplats (Pty) Ltd	Specialist and Report Writer
2024	Public Participation Process/ Stakeholder Engagement for the Ivanplats Application for Integrated Environmental Authorisation for the proposed Dry Stack TSF Project	Ivanplats (Pty) Ltd	Specialist and Report Writer
2024	Social Impact Assessment for the proposed Fuleni Mining Project within King Cetshwayo District Municipality, uMfolozi Municipality, Kwa-Zulu Natal Province	Imvukuzane Resources (Pty) Ltd	Specialist and Report Writer
2024	Kusasalethu Deelkraal Water Use Licence and GN 704 Audits	Harmony Gold Mining Company Limited	Specialist and Report Writer
2024	Health Impact Assessment for the proposed Fuleni Mining Project within King Cetshwayo District Municipality, uMfolozi Municipality, Kwa-Zulu Natal Province	Imvukuzane Resources (Pty) Ltd	Specialist and Report Writer
2024	Health Impact Assessment for the proposed Underground Expansion Project at East and West Mines for Tharisa Minerals Near Marikana, North West Province	Tharisa Minerals (Pty) Ltd	Specialist and Report Writer
2024	Community Health Impact Assessment for the Proposed Minetek Resources Newcastle Coal Mine Project, Newcastle, KwaZulu-Natal	Minetek Resources (Pty) Ltd	Specialist and Report Reviewer

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2025	Community Health Impact Assessment for the Proposed Hiryo Plant (Ammonia Manufacturing) Project, Located on a Portion of Portions 6 and 50 of the Farm Vlaklaagte 45 IS, near Kriel, Mpumalanga Province	Suiso (Pty) Ltd	Specialist and Report Writer
2025	Health Impact Assessment for the Proposed for the Proposed Metallurgical Projects in the Musina-Makhado Special Economic Zone (MMSEZ)	Gudani Consulting (Pty) Ltd	Specialist and Report Writer
2025	Community Health Impact Assessment for the Proposed Development of a 10784 - 750MW Combined Cycle Gas Turbine Power Plant in Richards Bay	Mabasa Energy Fuels (Pty) Ltd	Specialist and Report Reviewer
2025	Community Health Impact Assessment Study for the Proposed CEN Manganese and Iron ore Storage and Conveyor Facility near Newlyn Saldanha Bay, Western Cape	CEN Integrated Environmental Management Unit	Specialist and Report Writer

Environmental Assessment Practitioners Association of South Africa

Registration No. 2019/1183

Herewith certifies that

VUMILE RIBEIRO

is registered as an

Environmental Assessment Practitioner

Registered in accordance with the prescribed criteria of Regulation 15. (1) of the Section 24H Registration Authority Regulations (Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended).

Effective: 01 March 2025

Expires: 31 March 2026

Chairperson

Registrar

SAQA
SOUTH AFRICAN QUALIFICATIONS AUTHORITY

EAPASA
Unit 19 Oxford Office Park
3 Bauhinia Street
Highveld Techno Park
Centurion
0157
Tel. (+27) 12 880 2154

Email: registrar@eapasa.org / Website: www.eapasa.org

Environmental Assessment Practitioners Association of South Africa
Advancing environmental assessment practice in South Africa

Mrs Vumile Ribeiro
28 Shamrock Street
Ferndale
Randburg
2194

Sent by email to: vumile@niara.co.za

Dear Mrs Ribeiro

Registered Environmental Assessment Practitioner: Number 2019/1183
Vumile Celiwe Ribeiro : South African ID 8605090831080

The Environmental Assessment Practitioners Association of South Africa (EAPASA) herewith certifies that Vumile Celiwe Ribeiro is a Registered Environmental Assessment Practitioner (EAP) in accordance with the prescribed criteria of Regulation 15.(1) of the Section 24H Registration Authority Regulations (Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended).

Your registration is duly authorised by EAPASA as the single Registration Authority for EAPs in South Africa (appointed as per Regulation No. 104, Gazette No. 41434 of 8 February 2018, in terms of section 24H(3)(a) of the NEMA). Your status as a Registered EAP is displayed in the 'EAP Register' - please find your name and contact email address at

https://registration.eapasa.org/registered-practitioners

Your registration is effective for a period of five years from 08 February 2024, and expires on 08 February 2029. The renewal of your registration in 2029 will be contingent on you having met the requirements of EAPASA's Continuing Professional Development (CPD) policy during each year of registration.

As a Registered EAP you are required to uphold the EAPASA Code of Ethical Conduct and Practice in your professional endeavours, towards the goal of quality assurance in environmental assessment practice.

Please accept my congratulations on your registration.

Best regards

Dr Patrick Sithole
Registrar
Date: 08 February 2024

iap2 international association for public participation SOUTHERN AFRICA

This is to certify that

Vumile Ribeiro

is a member of the

INTERNATIONAL ASSOCIATION FOR PUBLIC PARTICIPATION

for the year

2025

Membership Number IAP2SA180

M. Makwela

Mike Makwela
Chairperson

IAIAsa Secretariat
Tel +27(0)11 655 7183
Fax 086 662 9849

Address:
43 Birchwood Court, Montrose Street, Vorna Valley, Midrand, 1618

Postal address:
PO Box 11666, Vorna Valley, 1686

Email: operations@iaiasa.co.za

Website: www.iaiasa.co.za

IAIAsa Confirmation of Membership: 2025/2026

Vumile Ribeiro | Membership no: 5925

TO WHOM IT MAY CONCERN

This certificate confirms that Vumile Ribeiro, from Niara Environmental Consultants with membership number: 5925 is a paid-up Full Member in good standing of the International Association for Impact Assessment South Africa and has been a member of IAIAsa since Thursday, March 1, 2018 to date.

This membership is valid from 1 March 2025 to 28 February 2026.

IAIAsa is a voluntary organisation and is not a statutory body regulating the profession. Its members are however expected to abide by the organisation's code of ethics which is available on our website.

IAIAsa is an Affiliate of IAIA, which is an international body, through a memorandum of understanding. IAIA is not responsible or liable for the actions or activities of the Affiliates. Membership of one does not imply membership of the other.

Any enquiries regarding this membership may be directed to the Secretariat at the above contact details.

Yours Sincerely

Corné Niemandt
President 2024/2025

IAIAsa Membership Certificate

Full Name	Vumile Ribeiro
E-mail	vumile@niara.co.za
Company Name:	Niara Environmental Consultants
Member Type:	Full
IAIAsa Membership Number:	5925
IAIAsa Member Since	Thursday, March 1, 2018

PHASA
Public Health Association of South Africa

MEMBERSHIP CERTIFICATE

This certifies that

Vumile Ribeiro

is a registered member of the **Public Health Association of South Africa**

Membership number: 2022378

Membership period ends: 03-18-2025

19th March 2024

Date

PHASA President

Secretariat Enquiries

secretariat@phasa.org.za or phasa.info@gmail.com

28419660

University of Pretoria

The Council and Senate hereby declare that
at a congregation of the University the degree

Bachelor of Social Sciences Honours

in

Environmental Analysis and Management

with all the associated rights and privileges
was conferred on

Vumile Celiwe Dlamini

in terms of the Higher Education Act, 1997 and the Statute of the University

On behalf of the Council and Senate

Vice-Chancellor and Principal

On behalf of the Faculty of Humanities

Dean (Acting)

Registrar

2012-04-23

CERTIFIED A TRUE COPY
OF THE ORIGINAL

Tshegofatso Mokoena
13 Eton Road
Parktown, 2193, Johannesburg
Commissioner of Oaths *Ex Officio*
Practising Attorney
Republic of South Africa
04/08/2023

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Denkleiers • Leading Minds • Dikgopolo tša Dihlalefi

STUDENT NUMBER	28419660
SURNAME	Dlamini
FIRST NAMES	Vumile Celiwe
DATE OF BIRTH	1986-05-09
TYPE OF EXEMPTION	Gr 12 not required
DATE ISSUED	2012-02-23

LIST OF COURSES PASSED

2011 (Full-time)	Program: BSocSci Hons		Plan: Environmental Anal and Mngm	
Course offering	**Description**	**Academic progress unit**	**%**	**Decision result**
GGY 793	Geography of land reform 793	20	75	A- (Pass with distinction)
GGY 785	Env impact assess and man 785	20	68	B+ (Pass)
GGY 780	Urban geography of SA 780	20	75	A- (Pass with distinction)
GGY 729	Industrial environmental 729	20	78	A- (Pass with distinction)
GGY 727	Environmental compliance 727	20	68	B+ (Pass)
GGY 711	Environmental principles 711	20	75	A- (Pass with distinction)
GGY 703	Research and presen skills 703	10	68	B+ (Pass)
GGY 702	Geography Project 702	30	73	B+ (Pass)

Term percentage average: **72.81**
Cumulative Percentage Average: **72.81**

Outcome: Bachelor of Social Sciences Honours

The abovementioned student formally complied with all the requirements for the qualification: Bachelor of Social Sciences Honours on 2012-01-31 and this qualification will be conferred/issued on 2012-04-23

2012 (Full-time)	Program: BSocSci Hons		Plan: Environmental Anal and Mngm	
	In partial fulfilment of the requirements for Bachelor of Social Sciences Honours			
Course offering	**Description**	**Academic progress unit**	**%**	**Decision result**

Term percentage average: **0.00**
Cumulative Percentage Average: **72.81**

for **REGISTRAR**

OFFICE OF THE DEAN
FACULTY OF HUMANITIES
24 FEB 2012
STUDENTE ADMINISTRASIE
STUDENT ADMINISTRATION
UNIV VAN/OF PRETORIA

SOUTH AFRICAN POLICE SERVICE
2012 -03- 25

I CERTIFY THAT THIS IS A TRUE REPRODUCTION (COPY) OF THE ORIGINAL DOCUMENT. I FURTHER CERTIFY THAT FROM MY OBSERVATIONS, AN AMENDMENT OR A CHANGE WAS NOT MADE TO THE ORIGINAL DOCUMENT.
SIGNED
RANK
FORCE NUMBER
NAME IN PRINT

University of Pretoria

Faculty of Natural and Agricultural Sciences

Centre for Environmental Studies

This is to certify that

VC Dlamini

has successfully completed the

Basic Training Course for Environmental Inspection

July to December 2011

CERTIFIED A TRUE COPY
OF THE ORIGINAL

Tshegofatso Mokoena
13 Eton Road
Parktown, 2193, Johannesburg
Commissioner of Oaths *Ex Officio*
Practising Attorney
Republic of South Africa
04/08/2023

Course Leader

General Manager CE and CP

UNIVERSITY OF KWAZULU-NATAL

The Universities of Durban-Westville and Natal merged
to become the University of KwaZulu-Natal on 1 January 2004

This is to certify that

Vumile Celiwe Dlamini

was admitted this day
at a congregation of the University
to the degree of

Bachelor of Social Science
(Geography and Environmental Management)

having satisfied the conditions prescribed for the degree.

M W Makgoba
Vice-Chancellor

E Mnensy
Registrar

D P McCracken
Dean

CERTIFIED A TRUE COPY
OF THE ORIGINAL

Tshegofatso Mokoena
13 Eton Road
Parktown, 2193, Johannesburg
Commissioner of Oaths *Ex Officio*
Practising Attorney
Republic of South Africa
04/08/2023

23 April 2007

THE GLOBAL HEALTH NETWORK

Enabling research by sharing knowledge

Hereby Certifies that

VUMILE DLAMINI

has completed the e-learning course

INTRODUCTION TO CLINICAL RESEARCH

with a score of

89%

on

05/12/2018

This e-learning course has been formally recognised for its quality and content by the following organisations and institutions

WWARN

EACCR

LSTM LIVERPOOL SCHOOL OF TROPICAL MEDICINE

THE GLOBAL HEALTH NETWORK

Enabling research by sharing knowledge

Global Health Training Centre
globalhealthtrainingcentre.org/elearning

Certificate Number 579917

Lindokuhle Vincent Hlongwane

Wetland Specialist
SACNASP Ecological Science (400100/1)

Address: Office 1 Palm Place Office Park, 22 Bram Fischer Drive, Linden, 2195
Email: lindo@niara.co.za
Contact No: +27 82 086 8901

EDUCATION AND QUALIFICATIONS

- Bsc Hons, University of Witwatersrand, 2006
- Bsc Degree, University of Witwatersrand, 2005

AFFILIATIONS

- South African Council for Natural Scientific Professions
- Network for Industrially Contaminated Land in Africa

YEARS OF EXPERIENCE

- 17 Years

KEY COMPETENCIES

- Baseline Wetland Assessments
- Contaminated Land Management
- Environmental Auditing

COUNTRIES OF WORK EXPERIENCE

- South Africa
- Botswana
- Mali

LANGUAGES

- English
- IsiZulu
- Southern Sotho

BIOGRAPHY

Lindokuhle Hlongwane serves as the Principal Consultant with over 17 years of professional experience as both a Wetland Specialist and a Contaminated Land Specialist. Lindokuhle has worked extensively both locally and internationally. He is a registered Professional Natural Scientist with the South African Council for Natural Scientific Professions (SACNASP) and is also an active member and steering committee fellow of the Network for Industrially Contaminated Land in Africa (NICOLA).

Lindokuhle began his career in wetland assessments during his internship, contributing to the rollout and update of “A Practical Field Procedure for Identification and Delineation of Wetlands and Riparian Areas.” Since then, he has conducted numerous wetland assessments across various sectors, including housing developments, mining, and industrial projects.

In the realm of contaminated land management, Lindokuhle's expertise encompasses baseline contamination assessments, delineation of contamination plumes, development of Conceptual Site Models, setting Remedial Objectives (RO), crafting End State Visions, conducting Remedial Alternatives Analyses (RAA), and overseeing the installation of Remediation Systems such as Multi-Phase Extraction, Soil Vapour Extraction, and Sub-slab Depressurization Systems. He is adept at evaluating the efficacy of remediation systems, ensuring that remedial objectives are met, and driving projects to successful closure.

Lindokuhle is skilled in managing complex projects and navigating interactions with challenging stakeholders. His extensive experience also includes collaborating with landowners and conveyancers to provide critical input for land sale agreements. A self-motivated and trained project manager, Lindokuhle prioritizes budget, schedule, safety, and the quality of the final product. He firmly believes that incident-free operations are achievable when stakeholders unite as One Team to complete projects with zero incidents.

EMPLOYMENT HISTORY

Jul-2013 to Present: Independent Environmental Consultant

Jun-2012 to Jun-2013: Wetland Specialist, Digby Wells Environmental (Pty) Ltd

Jan-2010 to May-2012: Contaminated Land Specialist , Mills And Otten Environmental Consulting (Pty) Ltd

Jan-2007 to Mar-2009: Internship, Wetlands Consulting Services (Pty) Ltd

EXPERIENCE HIGHLIGHTS

The below highlight key recent and relative project experience:

- Rolling out of the Practical Field Procedure for Identification and Delineation of the Wetlands and Riparian Areas (DWAF 2005), DWAF, Trainer
- Crocodile West Ecological Reserve Determination Study, DWAF, Trainee Fluvial Geomorphologist
- Thukela Hydro Electric Power Scheme: Ecological Reserve Determination Study , DWAF, Fluvial Geomorphologist
- Wetland Assessment Study for the Proposed Universal Coal plc: Kangala Coal Mine, Delmas, Mpumalanga Province, South Africa, Kangala Coal Mine, Wetland Specialist
- External Audit in Fulfilment of The Integrated Water Use Licence for Klipspruit Water Treatment Plant- Year 2022, Seriti Klipspruit Colliery, Lead Auditor

Please consult the attached appendix for a comprehensive list detailing the project experiences undertaken.

APPENDIX A: PROJECT EXPERIENCE

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2007-2008	Rolling out of the Practical Field Procedure for Identification and Delineation of the Wetlands and Riparian Areas (DWAF 2005).	Department of Water Affairs and Forestry, South Africa	Trainer
2008-2009	Upgrading the Practical Field Procedure for Identification and Delineation of the Wetlands and Riparian Areas (DWAF 2005).	Department of Water Affairs and Forestry, South Africa	Trainer
2007-2008	Upper Vaal Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Trainee Fluvial Geomorphologist
2007-2008	Inkomati Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Trainee Fluvial Geomorphologist;
2008-2009	Crocodile West Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Fluvial Geomorphologist
2008-2009	Groot Marico Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Fluvial Geomorphologist
2008-2009	Weza River Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Fluvial Geomorphologist
2009-2010	Mzimvubu River Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Fluvial Geomorphologist
2009-2010	Thukela Hydro Electric Power Scheme: Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Fluvial Geomorphologist
2015	Wetland Assessment Study for a Pan Associated with an Existing Honingkranz sand Winning Operations, Bronkhorstspruit, Mpumalanga Province, South Africa;	Honningkrantz Sand Winning Operations, South Africa	Wetland Specialist
2013	Wetland Assessment Study for the Proposed Exxaro Coal: Thabametsi Coal Mine, Lephalale, Limpopo Province, South Africa;	Exxaro Coal, South Africa	Wetland Specialist
2013	Wetland Assessment Study for the Existing Rand Gold Resources: Loulo-Gounkoto Gold Mine, Mali	Rand Gold Resources, Mali	Wetland Specialist
2013	Wetland Assessment Study for the Proposed Universal Coal plc: Kangala Coal Mine, Delmas, Mpumalanga Province, South Africa;	: Kangala Coal Mine, South Africa	Wetland Specialist
2013	Wetland Assessment Study for the Proposed Universal Coal plc: Roodekop Coal Mine, Delmas, Mpumalanga Province, South Africa;	Roodekop Coal Mine, South Africa	Wetland Specialist

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2014	Wetland Assessment Study for the Proposed Msobo Coal: Cronsbrey Coal Mine, Chrissesmere, Mpumalanga Province, South Africa;	Xstarta Coal, South Africa	Wetland Specialist
2014	Wetland Assessment Study for the Proposed Anglo Thermal Coal: Dalyshope Coal Mine, Liphalale, Limpopo Province, South Africa;	Anglo Thermal Coal, South Africa	Wetland Specialist
2014	Wetland Assessment Study for the Proposed Msobo Coal: Harwar Coal Mine, Chrissesmere, Mpumalanga Province, South Africa;	Xstarta Coal, South Africa	Wetland Specialist
2014	Wetland Assessment Study for the Proposed Coal Fired Power Station and Associated Infrastructure: IPP Thabametsi Power Station, Liphalale, Limpopo Province, South Africa;	Thabametsi IPP, South Africa	Wetland Specialist
2014	Wetland Assessment Study for the Proposed Anglo Thermal Coal: Dalyshope Coal Mine, Liphalale, Limpopo Province, South Africa;	Anglo Thermal Coal	Wetland Specialist
2014	Wetland Assessment Study for the Proposed Vedanta IPP Project: Vedanta Resources PLC, Liphalale, Limpopo Province, South Africa;	Vedanta Resources PLC	Wetland Specialist
2012	Wetland Assessment Study for the Proposed BHP Billiton: Klipsruit Coal Mine, Oogies, Mpumalanga Province, South Africa;	Klipsruit Coal Mine, South Africa	Wetland Specialist
2012	Wetland Assessment Study for the Proposed Waste Rock Dump associated with the existing Anglo Thermal Coal Greenside Colliery, Witbank, Mpumalanga Province, South Africa;	Anglo Thermal Coal Greenside Colliery, South Africa	Wetland Specialist
2012	Wetland Assessment Study for the Proposed Waste Rock Dump Associated with the Existing Anglo Thermal Coal Kleinkopje Colliery, Witbank, Mpumalanga Province, South Africa;	Anglo Thermal Coal Kleinkopje Colliery	Wetland Specialist
2015	Wetland Assessment Study for the Proposed Waste Rock Dump Associated with the Existing Anglo Thermal Coal Goedehoop Colliery, Witbank, Mpumalanga Province, South Africa;	Anglo Thermal Coal Goedehoop Colliery, South Africa	Wetland Specialist
2014	Wetland Assessment Study to Support the Biodiversity Management Plan at the Existing Anglo Thermal Coal New Vaal Colliery, Vanderbijylpark, Free State Province, South Africa;	Anglo Thermal Coal New Vaal Colliery, South Africa	Wetland Specialist

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2014	Wetland Assessment Study for the Proposed Geluksdal Tailings Storage Facility and Pipeline Infrastructure: Gold One International, Randfontein, Gauteng Province, South Africa;	Gold One International, South Africa	Wetland Specialist
2017	Ecological Assessment of Wetland Areas Associated with the Proposed Olive Street Estate Located on Portions of the Farm Vlakfontein 523 JR, Bronkhorstspruit;	Olive Street Estate, South Africa	Wetland Specialist
2017	Baseline Wetland Assessment Study for the Proposed Schoongezicht Coal Mine Located on Portions of Portion 6 of the Farm Schoongezicht 308 JS Emalahleni, Mpumalanga Province;	Schoongezicht Coal Mine, South Africa	Wetland Specialist
2023	Baseline Wetland Assessment Study for the Water Use Licence Application for Randfontein Estate Limited: Doornkop Mine	Randfontein Estate Limited, South Africa	Wetland Specialist
2016	Baseline Wetland Assessment Study for the Proposed Railway Coal Siding at the Highveld Steel and Vanadium Corporation Plant on the Farm Elandsfontein 309 JS, Clewer, Emalahleni, Mpumalanga Province	Highveld Steel (Pty) Ltd, South Africa	Wetland Specialist
2023	External Audit Report in Fulfilment of The Integrated Water Use License for Klipspruit Extension- Year 2022;	Seriti, Klipspruit Colliery, South Africa	Lead Auditor
2023	External Audit in Fulfilment of The Integrated Water Use License for Klipspruit Main Pit- Year 2022;	Seriti, Klipspruit Colliery, South Africa	Lead Auditor
2023	External Audit in Fulfilment of The Integrated Water Use Licence for Klipspruit South Pit- Year 2022	Seriti, Klipspruit Colliery, South Africa	Lead Auditor
2023	External Audit in Fulfilment of The Integrated Water Use Licence for Klipspruit Water Treatment Plant- Year 2022;	Seriti, Klipspruit Colliery, South Africa	Lead Auditor
2023	Khutala Colliery Regulation 704 Compliance Audit and stormwater management Plan dated October 2023;	Seriti, Khutala Coal Mine, South Africa	Lead Auditor
2023	External Audit Report in Fulfilment of The Integrated Water Use License for Khutala Mine Portion 16 - Year 2022;	Seriti, Khutala Coal Mine, South Africa	Lead Auditor

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2023	External Audit Report in Fulfilment of The Integrated Water Use Licence for Klipspruit South Pit- Year 2022;	Seriti Klipspruit Colliery, South Africa	Lead Auditor

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

At a congregation of the University

held on 6 April 2006

Lindokuhle Vincent Hlongwane

was admitted to the Degree of

Bachelor of Science

Dean, Faculty of Science

Vice-Chancellor and Principal

Registrar

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

At a congregation of the University

held on 05 April 2007

Lindokuhle Vincent Hlongwane

was admitted to the Degree of

Bachelor of Science with Honours

(Ecology, Environment and Conservation)

Dean :Faculty of Science

Vice-Chancellor and Principal

Registrar

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Lindokuhle Vincent Hlongwane

Registration number: 400100/13

is registered as a

Professional Natural Scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule I of the Act)

Biological Science **05 June 2013**

05 June 2013

Pretoria

President

Executive Director

CPTS0168-20010/02/

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

Certificate of Competence

DVC (Academic)

Centre for Part-Time Studies

This is to certify that

Lindokuhle Hlongwane

from 24 August 2020 to 02 December 2020
has met the minimum requirements for competence in

Principles of Project Management Theory and Practice

(details overleaf)

BMMbacquel

...d, Centre for Part-Time Studies

...te of Issue: 12 May 2021

R. Osman

DVC (Academic