



PALAEONTOLOGICAL DESKTOP ASSESSMENT

PROPOSED PHASE 2F PIPELINE RE-ALIGNMENT AND ASSOCIATED INFRASTRUCTURE, IN THE CAPRICORN AND SEKHUKHUNE DISTRICT MUNICIPALITIES, WITHIN THE FETAKGOMO TUBATSE AND LEPELLE NKUMPI LOCAL MUNICIPALITIES, IN THE LIMPOPO PROVINCE.

November 2024

COMPILED FOR: ZUTARI (PTY) LTD



Declaration of Independence

I, Elize Butler, declare that –

General declaration:

- I act as the independent palaeontological specialist in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favorable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting palaeontological impact assessments, 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 will take into account, to the extent possible, the matters listed in section 38 of the NHRA when preparing the application and any report relating to the application;
- 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;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favorable to the applicant or not
- All the particulars furnished by me in this form are true and correct;



- I will perform all other obligations as expected a palaeontological specialist in terms of the Act and the constitutions of my affiliated professional bodies; and
- I realize that a false declaration is an offense in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the NEMA.

Disclosure of Vested Interest

I do not have and will not have any vested interest (either business, financial, personal, or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations.

PALAEONTOLOGICAL CONSULTANT:

Banzai Environmental (Pty) Ltd

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SIGNATURE:



This Palaeontological Impact Assessment report (as part of the Heritage Impact Assessment), has been compiled considering the National Environmental Management Act 1998 (NEMA) and Environmental Impact Regulations 2014 as amended, requirements for specialist reports, Appendix 6, as indicated in the table below.

Table 1: Checklist for Specialist studies conformance with Appendix 6 of the EIA Regulations of 2014 (as amended).

Requirements of Appendix 6 – GN R326 EIA Regulations of 7 April 2017	The relevant section in the report	Comment where not applicable.
1.(1) (a) (i) Details of the specialist who prepared the report	Page ii and Section 2 of Report – Contact details and company and Appendix A	-
(ii) The expertise of that person to compile a specialist report including a curriculum vita	Section 2 – refer to Appendix A	-
(b) A declaration that the person is independent in a form as may be specified by the competent authority	Page ii of the report	-
(c) An indication of the scope of, and the purpose for which, the report was prepared	Section 4 – Methods and Terms of Reference	-
(cA) An indication of the quality and age of base data used for the specialist report	Section 5 – Geological and Palaeontological history	-



Requirements of Appendix 6 – GN R326 EIA Regulations of 7 April 2017	The relevant section in the report	Comment where not applicable.
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 7	-
(d) The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment	Executive Summary, Section 7 &8	-
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used	Section 4 – Methods and TOR	-
(f) details of an assessment of the specifically identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Executive Summary, Section 8	-
(g) An identification of any areas to be avoided, including buffers	Executive Summary, Section 8	
(h) A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Section 5 – Geological and Palaeontological history	-
(i) A description of any assumptions made and any uncertainties or gaps in knowledge;	Section 4. 1 – Assumptions and Limitation	-
(j) A description of the findings and potential implications of such findings on the impact of the	Executive Summary, Section 8	-



Requirements of Appendix 6 – GN R326 EIA Regulations of 7 April 2017	The relevant section in the report	Comment where not applicable.
proposed activity, including identified alternatives, on the environment		
(k) Any mitigation measures for inclusion in the EMPr	Section 9	-
(l) Any conditions for inclusion in the environmental authorisation	Executive Summary, Section 8	-
(m) Any monitoring requirements for inclusion in the EMPr or environmental authorisation	Executive Summary, Section 8	-
(n)(i) A reasoned opinion as to whether the proposed activity, activities or portions thereof should be authorised and	Executive Summary, Section 8	-
(n)(iA) A reasoned opinion regarding the acceptability of the proposed activity or activities; and		-
(n)(ii) If the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	Executive Summary, Section 8	-
(o) A description of any consultation process that was undertaken during the course of carrying out the study	N/A	Not applicable. A public consultation process was handled as part of the Environmental



Requirements of Appendix 6 – GN R326 EIA Regulations of 7 April 2017	The relevant section in the report	Comment where not applicable.
		Impact Assessment (EIA) and Environmental Management Plan (EMP) process.
(p) A summary and copies of any comments that were received during any consultation process	N/A	Not applicable. To date, no comments regarding heritage resources that require input from a specialist have been raised.
(q) Any other information requested by the competent authority.	N/A	Not applicable.
(2) Where a government notice by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	Section 3 compliance with SAHRA guidelines	



EXECUTIVE SUMMARY

Banzai Environmental was appointed by ZUTARI (Pty) Ltd to conduct the Palaeontological Desktop Assessment (PDA) to assess the proposed Phase 2F Pipeline Re-alignment and Associated Infrastructure, in the Capricorn and Greater Sekhukhune District Municipalities, within the Fetakgomo Tubatse and Lepelle Nkumpi Local Municipalities, in the Limpopo Province (the Project). In accordance with the National Environmental Management Act (Act No. 107 of 1998) (NEMA) and to comply with the National Heritage Resources Act (No 25 of 1999, section 38) (NHRA), this PDA is necessary to confirm if fossil material could potentially be present in the planned development area, to evaluate the potential impact of the proposed development on the Palaeontological Heritage and to mitigate possible damage to fossil resources.

The proposed Project is underlain by Quaternary superficial deposit that includes alluvium and scree, as well as gabbro, norite and anorthosite and Dwars River Subsuite of the Rustenburg Layered Suite (Bushveld Complex). The PalaeoMap of the South African Heritage Resources Information System (SAHRIS) indicates that the Palaeontological Sensitivity of the Quaternary deposit is Low while that of the Bushveld Complex is Zero as it is igneous in origin and thus unfossiliferous (Almond and Pether, 2009; Almond et al., 2013, Groenewald et al 2014). The Department of Forestry, Fisheries and the Environment (DFFE) Web based Screening tool indicates that the Palaeontological Sensitivity of the study area is Medium. Updated geology (2014, Council for Geoscience, Pretoria) indicates that the Project is underlain by the alluvium, colluvium, eluvium and gravel as well as the Dsjate Subsuite and Dwars River Subsuite of the Rustenburg Layered Suite of the Bushveld Complex.

Desktop research (published data) concluded that **fossil heritage of scientific and conservational interest in the development area is rare**. This is in agreement with the Low Sensitivity allocated to the development area by the SAHRIS Palaeosensitivity Map and Medium Sensitivity of the DFFE Screening Tool. **A low Palaeontological Significance has been allocated for the construction phase of the Project pre-mitigation and a Very Low significance post mitigation**. The construction phase will be the only development phase impacting Palaeontological Heritage and **no significant impacts are expected to impact the Operational and Decommissioning phases**. As the No-Go Alternative considers the option of 'do nothing' and maintaining the status quo, it will have a Neutral impact on the Palaeontological Heritage



of the development. The **Cumulative impacts of the development is considered to be Low pre-mitigation and Low post mitigation and falls within the acceptable limits for the project.**

It is therefore considered that the Phase 2F Project will not lead to damaging impacts on the palaeontological resources of the area. The development **may thus be permitted in its whole extent, as the development footprint is not considered sensitive in terms of palaeontological resources.** It is consequently recommended that **no further palaeontological heritage studies, ground truthing and/or specialist mitigation are required, pending the discovery of newly discovered fossils.**

Recommendations:

- If Palaeontological Heritage is uncovered during surface clearing and excavations, the **Chance find Protocol** attached should be implemented immediately. Fossil discoveries ought to be protected and the Environmental Compliance Officer (ECO)/site manager must report to South African Heritage Resources Agency (SAHRA) (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that mitigation (recording and collection) can be carried out.
- Preceding any collection of fossil material, the specialist would need to apply for a collection permit from SAHRA. Fossil material must be curated in an accredited collection (museum or university collection), while all fieldwork and reports should meet the minimum standards for palaeontological impact studies suggested by SAHRA

These recommendations should be incorporated into the Environmental Management Programme (EMPr) for the Project in Limpopo.



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GLOSSARY OF TERMS

FOSSIL

A fossil is the preserved remnants or vestiges of a long-dead organism, generally from millions of years ago. Fossils can be mineralized skeletons, shells, or other hard pieces of ancient animals and plants, as well as impressions, moulds, and casts left in sedimentary rock when the organism's remains decomposed and left an impression. Fossils provide valuable insights into the evolution and biodiversity of ancient species, allowing scientists to study and understand their evolution and biodiversity.

HERITAGE

That which is inherited and forms part of the National Estate (historical places, objects, fossils as defined by the National Heritage Resources Act No 25 of 1999).

HERITAGE RESOURCES

This means any place or object of cultural significance and can include (but not limited to) as stated under Section 3 of the NHRA,

- places, buildings, structures, and equipment of cultural significance.
- places to which oral traditions are attached or which are associated with living heritage.
- historical settlements and townscapes.
- landscapes and natural features of cultural significance.
- geological sites of scientific or cultural importance.
- archaeological and palaeontological sites.
- graves and burial grounds, and
- sites of significance relating to the history of slavery in South Africa.

PALAEONTOLOGY

Any fossilised remains or fossil trace of animals or plants which lived in the geological past (other than fossil fuels or fossiliferous rock intended for industrial use) and any site which comprises of fossilised remains or traces of past life.



LIST OF ABBREVIATIONS

BAR	Basic Assessment Report
BPR	Break Pressure Reservoir
DEA	Department of Environmental Affairs
DFFE	Department of Forestry, Fisheries and the Environment
CA	National Competent Authority
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
ECA	Environmental Conservation Act
ECO	Environmental Control Officer
EIA	Basic Assessment Report
EMPr	Environmental Management Programme
ESO	Environmental Site Officer
ESR	Environmental Scoping Report
GBWSS	Greater Bloemfontein Water Supply System
GNR	Government Gazette No
HIA	Heritage Impact Assessment
LWUA	Lebalelo Water User Association
Ma	Millions of years ago
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act
MM	Mangaung Metropolitan Municipality
OMMP-BRWSP	Olifants Management Model Programme Bulk Raw Water Study Phase
PIA	Palaeontological Impact Assessment
PSSA	Palaeontological Society of South Africa
RoD	Record of Decision
RRoD	Revised Record of Decision
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
S&EIA	Scoping & Environmental Impact Assessment
SIP	Strategic Integrated Project
TCTA	Trans-Caledon Tunnel Authority
ToR	Terms of Reference



VCWB	Vaal Central Water Board – previously known as Bloem Water
WTP	Water Treatment Plant
ZNJV	Zutari Ndodana Joint Venture



1 INTRODUCTION

The Lebalelo Water User Association (LWUA) appointed the Zutari Ndodana Joint Venture (ZNJV) for the provision of professional services for the Olifants Management Model Programme Bulk Raw Water Study Phase (OMMP-BRWSP).

Phase 2 of the Olifants River Water Resources Development Project (ORWRDP-2) is a Department of Water and Sanitation (DWS) project, which underwent an environmental impact assessment (EIA) process and obtained a positive Record of Decision (RoD) from the Department of Environmental Affairs (DEA)¹ in 2006 in terms of the Environmental Conservation Act, No. 73 of 1989 (ECA). After many appeals by large organisations, including the Kruger National Park, the Minister decided to grant the Revised RoD (RRoD) (ref: **12/12/20/553**), dated 16 October 2006.

The approved ORWRDP-2 consists of various phases as defined below (refer to **Figure 1**). These were previously implemented by the Trans-Caledon Tunnel Authority (TCTA). The phases are designed and implemented in a phased manner, depending on need and availability of finances. For this reason, phase specific Environmental Management Programmes (EMPrs) are developed and submitted for approval to the Competent Authority (CA).

Phase 2A: Construction of De Hoop Dam

Phase 2B: Pipeline from Flag Boshielo Dam to Pruissen near Mokopane (72 km)

Phase 2B+: Consists of a raw water pipeline from Pruissen Reservoir to the proposed Sekuruwe Water Treatment Works (WTW), including offtakes to the proposed Mokopane WTW and two commercial user offtakes.

Phase 2C: Pipeline from De Hoop Dam to Mooihoek

Phase 2D: Pipeline from Steelpoort to Mooihoek (24 km)

Phase 2E: Pipeline from Mooihoek to Havercroft Junction (14 km)

Phase 2F: Pipeline from Havercroft Junction to Olifantspoort (44 km) (**Focus of this study**)

Phase 2G: Possible second pipeline parallel to Phase 2B

Phase 2H: Changes and additions to the current Phase 2H (Lebalelo Network); and

Phase 2I: Pipeline from the De Hoop Dam to the proposed Eskom Tubatse Pump-storage Hydro-electric Scheme.

The ORWRDP-2 has since been reconstituted to become the OMMP-BRWSP in recent years, with the LWUA acting as the implementing agent for the following portions of the project:

- Phase 2B
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Reg No. 2015/332235/07 |



- Phase 2B+
- Phase 2D; and
- Phase 2F

Furthermore, since inception, the project has acquired the status of strategic importance, and recently on 05 March 2023 the project was classified as a Strategic Integrated Project (SIP) under the SIP 19 (i.e., Water and Sanitation Infrastructure Portfolio). As such, it is critical that the project must be expedited in terms of Schedule 2 (Section 17(2) of the Infrastructure Development Act, No. 23 of 2014. The purpose of this piece of legislation is to provide facilitation and coordination of public infrastructure development which is of economic significance or social importance in South Africa and to ensure that infrastructure development in the country is given priority in planning, approval, and implementation.

The focus of this report will be Phase 2F:

For this application, the Lebalelo Water Use Association (LWUA), on behalf of the Department of Water and Sanitation (DWS), seeks authorisation for the approximately 3.35 km (~3,350 m) pipeline realignment, as well as the required access and internal roads necessary for the construction and operation of the entire Phase 2F alignment.

1.1 DESCRIPTION OF PHASE 2F

Phase 2F comprises approximately 60 km of pipeline intended to convey water to the Olifantspoort WTW, thereby augmenting the water supply to Polokwane and surrounding rural areas. The alignment of Phase 2F starts near Havercroft Junction, deviating from the R37 to take a more direct route to the Olifantspoort WTW, following existing gravel roads along part of the way (see **Figure 2-4**). The pipeline starts as a 1,200 mm diameter over 18.5 km, reducing to a 1,000 mm diameter over 25.6 km, originating at the Klipfontein Balancing Dam (or Break Pressure Dam) with a projected capacity of 21 ML.

The project area spans two local municipalities—Fetakgomo Tubatse and Lepelle Nkumpi—and two district municipalities—Capricorn and Sekhukhune—within the Limpopo Province. Along the pipeline route, several mines are located, including RPM Twickenham, Cromex Mining Mecklenburg, Sefateng Chrome Mines, and ARM Bokoni Platinum Mine (Atok), previously owned by Anglo Platinum. This area is recognised as part of the Critical Biodiversity Area (CBA) and situated within the Sekhukhuneland Centre of Floristic Endemism, known for its diverse plant life and habitat suitable for endemic species. A general



layout of all the project phases and pipeline alignments is illustrated in **Figure 3-4**. Phase 2F, is the easterly pipeline alignment indicated by the green line. For this application, LWUA, on behalf of the DWS, seeks authorisation for the approximately 3.35 km (~3,350 m) pipeline realignment (refer to Figure 4), as well as the required access and internal roads necessary for the construction and operation of the entire Phase 2F alignment.

An Environmental Authorisation (EA) (ref: **14/12/16/3/3/1/1626**) was obtained for Phases 2E & 2F in May 2017. This authorisation was valid for five (5) years and lapsed in June 2022. Following an interactive public participation process (PPP) in April 2022, facilitated by DWS and ZNJV, Condition 7 of the EA was amended on 2 May 2017 (ref: **14/12/16/3/3/1/1626/AM1**). The revised condition stipulates that the activity must commence within ten years of the authorisation issue date (i.e., by 2 May 2027), after which the authorisation will lapse, necessitating a new application for EA to proceed with the activity.

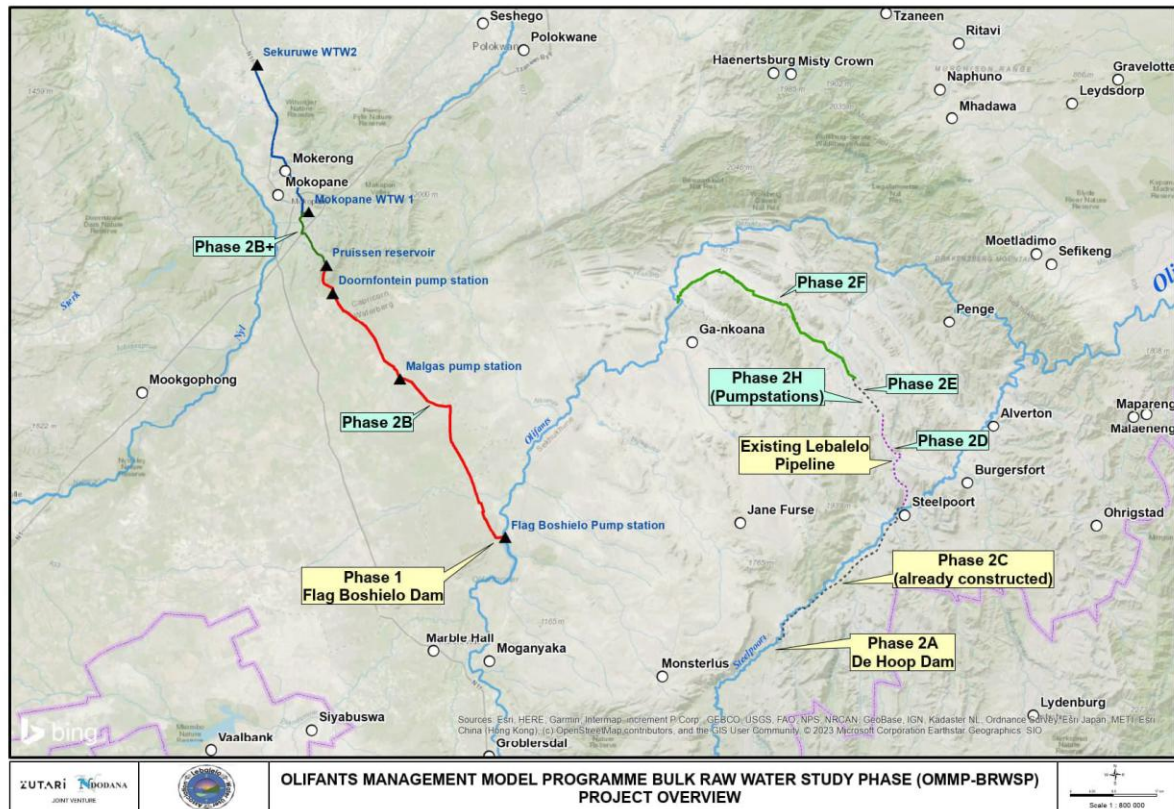


Figure 1: Map indicating the alignment of the different pipelines for the various Phases. The Northern Limb includes Phases 2B and 2B+ while the Eastern Limb consists of the phases in the east section of the project (i.e., Phases 2H, 2F, 2E and 2D). This project focusses on Phase 2D.

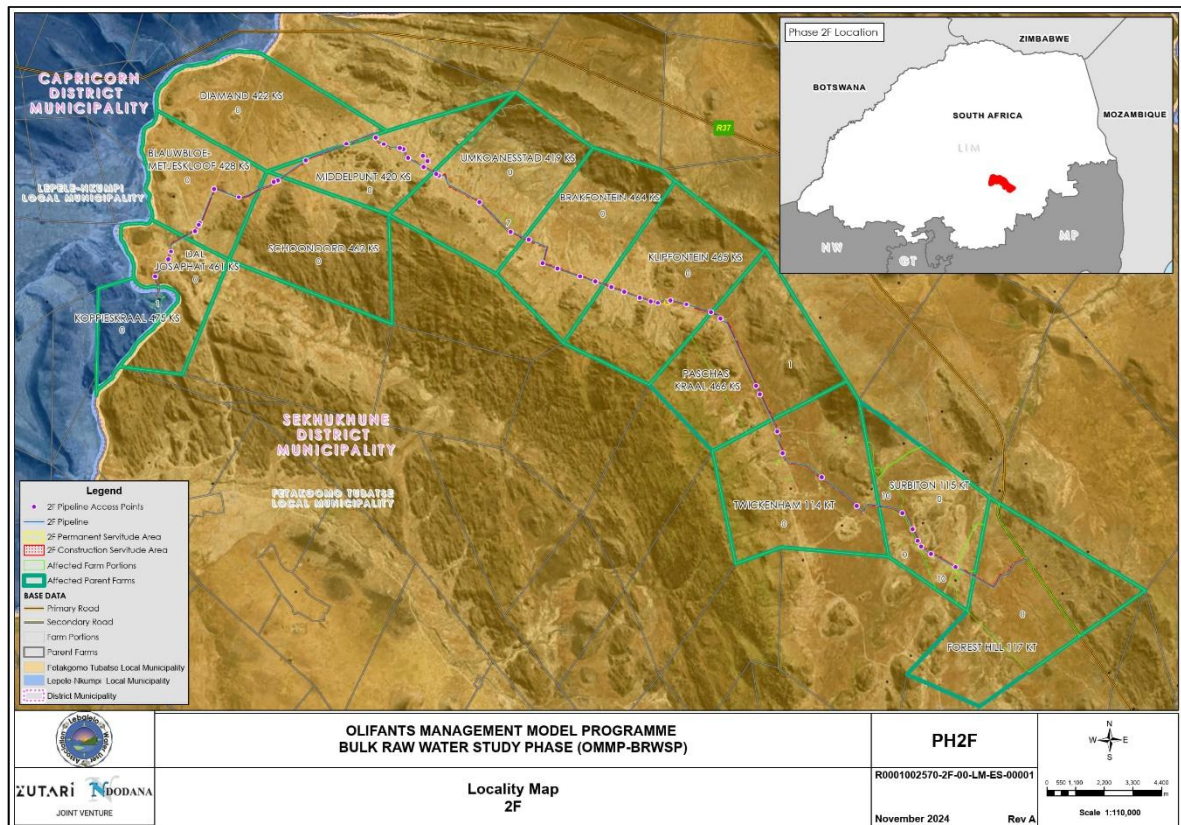


Figure 2: Map indicating the current proposed location and alignment of the Phase 2F scope.

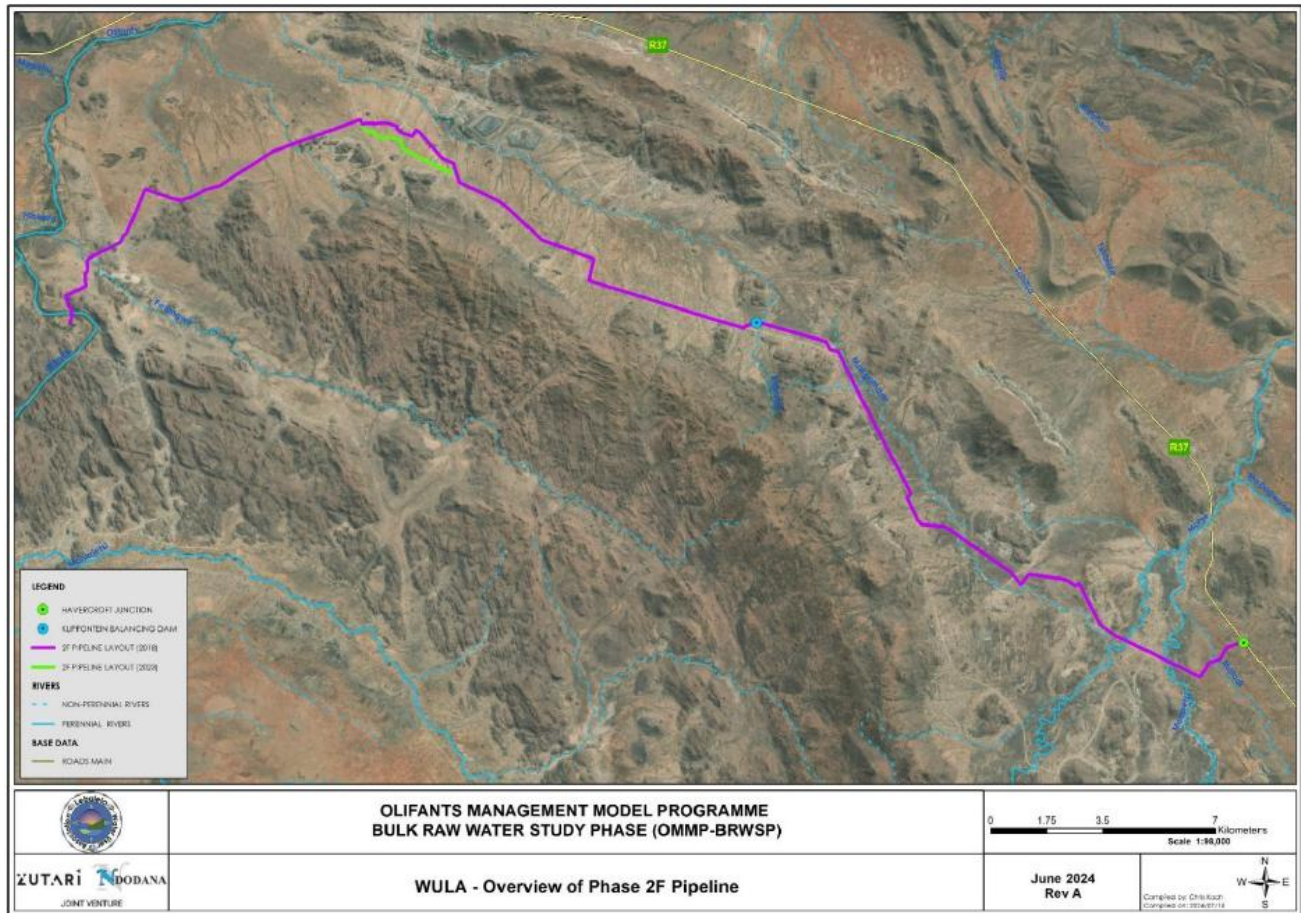


Figure 3: Map indicating the location and alignment of the previously authorised Phase 2F (2016) vs the new proposed alignment

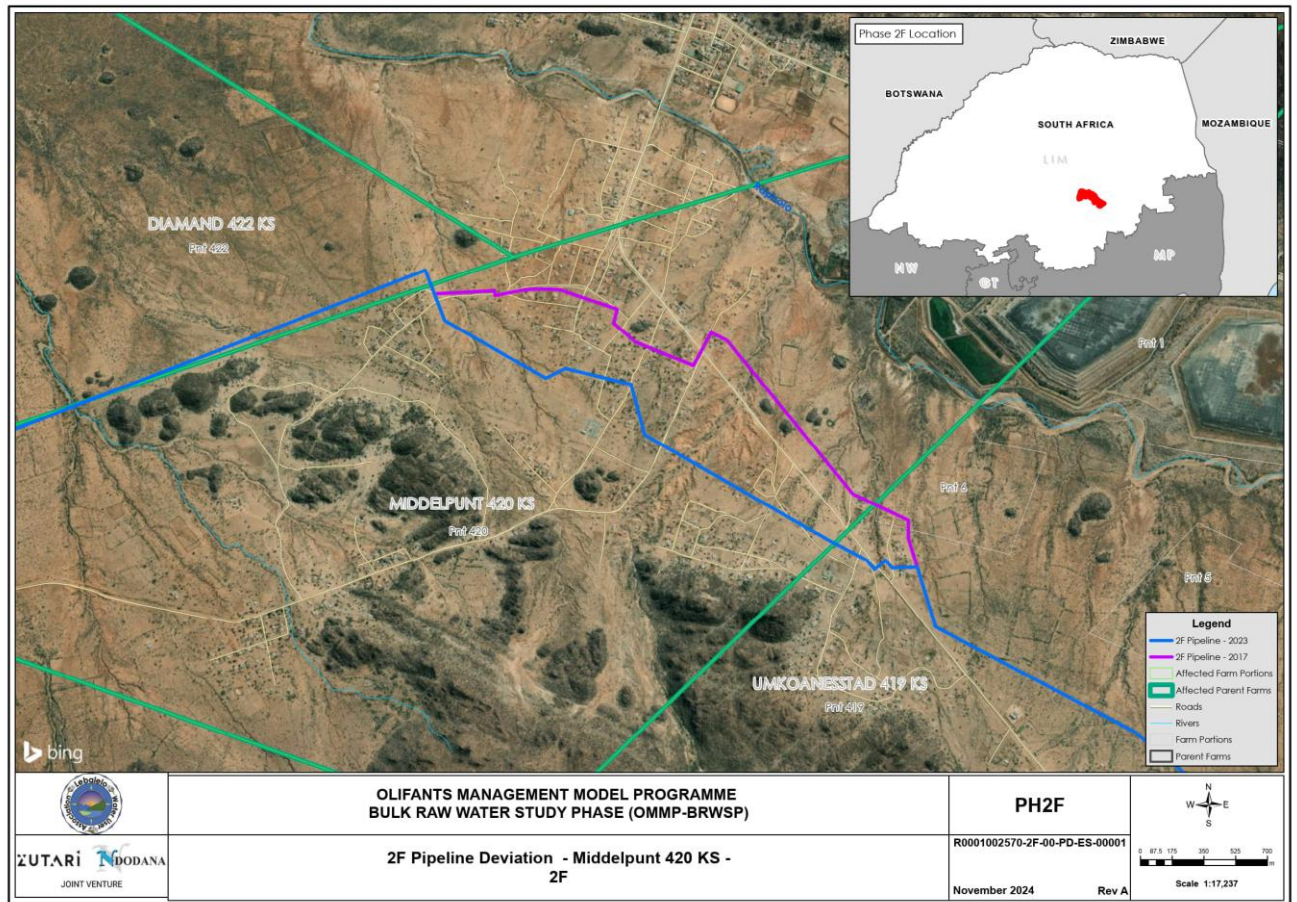


Figure 4: Pipeline deviation.



2 QUALIFICATIONS AND EXPERIENCE OF THE AUTHOR

This study has been conducted by Mrs Elize Butler. She has conducted approximately 750 palaeontological impact assessments for developments in the Free State, KwaZulu-Natal, Eastern, Central, and Northern Cape, Northwest, Gauteng, Limpopo, and Mpumalanga. She has an MSc (*cum laude*) in Zoology (specializing in Palaeontology) from the University of the Free State, South Africa and has been working in Palaeontology for more than twenty-eight years. She has experience in locating, collecting, and curating fossils, including exploration field trips in search of new localities in the Karoo Basin. She has been a member of the Palaeontological Society of South Africa (PSSA) since 2006 and has been conducting **Palaeontological Impact Assessments** (PIAs) since 2014.

A curriculum vitae is included in Appendix A of this specialist input report.

3 LEGISLATION

3.1 National Heritage Resources Act (25 of 1999)

Cultural Heritage in South Africa, is protected by the National Heritage Resources Act (Act No. 25 of 1999) (NHRA). Heritage resources as defined in Section 3 of the Act include **“all objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens”**.

The identification, evaluation and assessment of any cultural heritage site, artefact or finds in the South African context is required and governed by the following legislation:

- National Environmental Management Act (NEMA) (Act 107 of 1998)
- National Heritage Resources Act (NHRA) (Act 25 of 1999)
- Minerals and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002)
- Notice 648 of the Government Gazette 45421- general requirements for undertaking an initial site sensitivity verification where no specific assessment protocol has been identified.

The next section in each Act is directly applicable to the identification, assessment, and evaluation of cultural heritage resources.

Government Gazette Number (GNR) 982 (Government Gazette 38282, 14 December 2014)



promulgated under the National Environmental Management Act (NEMA) Act 107 of 1998, as amended

- Basic Assessment Report (BAR) – Regulations 19 and 23
- Environmental Impacts Assessment (EIA) – Regulation 23
- Environmental Scoping Report (ESR) – Regulation 21
- EMPr – Regulations 19 and 23

National Heritage Resources Act (NHRA) (Act 25 of 1999)

- Protection of Heritage Resources – Sections 34 to 36
- Heritage Resources Management – Section 38

MPRDA Regulations of 2014

Environmental reports to be compiled for application of mining right – Regulation 48

- Contents of scoping report – Regulation 49
- Contents of environmental impact assessment report – Regulation 50
- Environmental management programme – Regulation 51
- Environmental management plan – Regulation 52

The NEMA states that an integrated EMPr should (23:2 (b)) “...identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage”.

In agreement with legislative requirements, EIA rating standards as well as SAHRA policies the following comprehensive and legally compatible PIA report have been compiled.

Palaeontological heritage is exceptional and non-renewable and is protected by the NHRA. Palaeontological resources may not be unearthed, broken moved, or destroyed by any development without prior assessment and without a permit from the relevant heritage resources authority as per section 35 of the NHRA.

This PIA forms part of the Heritage Impact Assessment (HIA) and adhere to the conditions of the Act. According to **Section 38 (1)**, an HIA is required to assess any potential impacts to palaeontological heritage within the development footprint where:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length.
- the construction of a bridge or similar structure exceeding 50 m in length.
- any development or other activity which will change the character of a site—
Exceeding 5 000 m² in extent; or



- involving three or more existing erven or subdivisions thereof; or
 - involving three or more erven or divisions thereof which have been consolidated within the past five years; or
 - the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority
 - the re-zoning of a site exceeding 10 000 m² in extent.
- or any other category of development provided for in regulations by SAHRA or a Provincial heritage resources authority.

4 METHODS AND TERMS OF REFERENCE

The present field-based PIA assesses the potential impacts on Fossil Heritage on the development. This study forms part of the HIA. According to the "SAHRA APM Guidelines: Minimum Standards for the Archaeological and Palaeontological Components of Impact Assessment Reports" the purpose of the PIA is: 1) to identify the palaeontological importance of the rock formations in the footprint; 2) to evaluate the palaeontological magnitude of the formations; 3) to clarify the **impact** on fossil heritage; and 4) to suggest how the developer might protect and lessen possible damage to fossil heritage.

The palaeontological status of each rock section is calculated as well as the possible impact of the development on fossil heritage by a) the palaeontological importance of the rocks, b) the type of development and c) the quantity of bedrock removed.

All possible information is consulted to compile a scoping report, and this includes the following: Provisional DFFE Screening Tool, South African Heritage Resources Information System (SAHRIS) Palaeosensitivity map, all Palaeontological Impact Assessment reports in the same area; aerial photos and Google Earth images, topographical and geological maps as well as scientific articles of specimens from the development area and Assemblage Zones.

When the development footprint has a moderate to high palaeontological sensitivity a field-based assessment is necessary. The desktop and the field survey of the exposed rock determine the impact significance of the planned development and recommendations for further studies or mitigation are made. Destructive impacts on palaeontological heritage usually only occur during the construction phase while the excavations will change the current topography and destruct or permanently seal-in



fossils at or below the ground surface. Fossil Heritage will then no longer be accessible for scientific research.

During a site investigation the palaeontologist does not only survey the development but also tries to determine the density and diversity of fossils in the development area. This is confirmed by examining representative exposures of fossiliferous rocks (sedimentary rocks contain fossil heritage whereas igneous and metamorphic rocks are mostly unfossiliferous). Rock exposures that are investigated usually contains a large portion of the stratigraphic unit, can be accessed easily and comprise of unweathered (fresh) exposed rock. These exposures may be natural (rocky outcrops in stream or river banks, cliffs, dongas) but could also be artificial (quarries, open building excavations and even railway and road cuttings). It is common practice for palaeontologist to log well-preserved fossils (GPS, and stratigraphic data) during field assessment studies.

Mitigation usually precedes construction or may occur during construction when potentially fossiliferous bedrock is exposed. Mitigation comprises the collection and recording of fossils. Preceding excavation of any fossils, a permit from SAHRA must be obtained and the material will have to be housed in a permitted institution. When mitigation is applied correctly, a positive impact is possible as knowledge of local palaeontological heritage may be increased.

By physically evaluating bedrock outcrops to determine their lithology and fossil richness and crisscrossing the development footprint, one can assess an area's fossil potential. Because the presence of fossils at the surface is so unexpected, an average sample size of the region is investigated. To be clear, however, the lack of fossils in a development footprint does not automatically suggest that there is no palaeontologically important material present on the site (on or below the ground surface). No site investigation was conducted for this study as the Palaeontological Sensitivity of the development indicated on the SAHRIS PalaeoMap is Zero to Low.

The terms of reference of a PIA are as follows:

General Requirements:

- Adherence to the content requirements for specialist reports in accordance with Appendix 6 of the EIA Regulations 2014, as amended;
- Adherence to all applicable best practice recommendations, appropriate legislation and authority requirements;
- Submit a comprehensive overview of all appropriate legislation, guidelines;
- Description of the proposed project and provide information regarding the developer and consultant who commissioned the study,



- Description and location of the proposed development and provide geological and topographical maps
- Provide palaeontological and geological history of the affected area.
- Identification of sensitive areas to be avoided (providing shapefiles/kmls) in the proposed development;
- Evaluation of the significance of the planned development during the Pre-construction, Construction, Operation, Decommissioning Phases and Cumulative impacts. Potential impacts should be rated in terms of the direct, indirect and cumulative:
 - **Direct impacts** are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity.
 - **Indirect impacts** of an activity are indirect or induced changes that may occur as a result of the activity.
 - **Cumulative impacts** are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities.
- Fair assessment of alternatives (infrastructure alternatives have been provided):
- Recommend mitigation measures to minimise the impact of the proposed development; and
- Implications of specialist findings for the proposed development (such as permits, licenses etc).

4.1 Assumptions and Limitations

The focal point of geological maps is the geology of the area and the sheet explanations of the Geological Maps were not meant to focus on palaeontological heritage. Many inaccessible regions of South Africa have never been reviewed by palaeontologists and data is generally based on aerial photographs alone. Locality and geological information of museums and universities databases have not been kept up to date or data collected in the past have not always been accurately documented.

Comparable Assemblage Zones in other areas is also used to provide information on the existence of fossils in an area which has not documented in the past. When using similar Assemblage Zones and geological formations for Desktop studies, it is generally **assumed** that exposed fossil heritage is present within the footprint.



5 GEOLOGICAL AND PALAEOONTOLOGICAL HISTORY

The proposed Project is depicted on the 1:250 000 Nylstroom 2428 (1978) and Pilgrim's Rest 2430 (1986) Geological Map (Council of Geoscience, Pretoria) (**Figure 5; Table 2-3**). These maps indicate that the proposed Project is underlain by Quaternary superficial deposit that includes alluvium and scree (Q, yellow), as well as gabbro, norite and anorthosite (Vg) and Dwars River Subsuite (Vdr) of the Rustenburg Layered Suite (Bushveld Complex). The PalaeoMap of SAHRIS (**Figure 6, Table 4**) indicates that the Palaeontological Sensitivity of the Quaternary deposit is Low (blue) while that of the Bushveld Complex is Zero (grey) as it is igneous in origin and thus unfossiliferous (Almond and Pether, 2009; Almond et al., 2013, Groenewald et al 2014). The DFFE Web based Screening tool indicates that the Palaeontological Sensitivity of the study area is Medium (orange) (**Figure 7**). Updated geology (2014, Council for Geoscience, Pretoria) indicates that the Project is underlain by underlain by the alluvium, colluvium, eluvium and gravel (n-qg) as well as the Dsjate Subsuite (rds) and Dwars River Subsuite of the Rustenburg Layered Suite of the Bushveld Complex (**Figure 8**).

The Quaternary superficial deposits are the youngest geological formations, originating from the most recent geological period, which spans from approximately 2.6 million years ago to the present. These deposits primarily consist of unconsolidated sediments, such as clay, gravel, sand, and silt, which form relatively thin, discontinuous sediment patches or larger spreads onshore. These sediments include beach sands, channel deposits, floodplain and stream sediments, talus gravels, and glacial drift.

Quaternary deposits are significant because they reflect palaeoclimatic changes through the various geological formations (Hunter et al., 2006). During the climate fluctuations of the Cenozoic Era, most of the geomorphological features in southern Africa were shaped (Maud, 2012). According to Barnosky (2005), several warming and cooling events occurred throughout the Cenozoic, but he notes that the climatic changes of the Quaternary Period, especially the last 1.8 million years, were the most dramatic relative to all past climate variations. The climate shifts during the Quaternary were both drier and wetter than the present, leading to alterations in river flow patterns, sedimentation processes, and vegetation changes (Tooth et al., 2004).

Quaternary fossil assemblages are generally rare and low in diversity, though they span a broad geographical area. In some instances, these fossil assemblages may be found in extensive alluvial and colluvial deposits, often cut by dongas. Historically, palaeontologists paid little attention to Cenozoic superficial deposits, even though they sometimes contain significant fossil assemblages.



These fossils often resemble modern animals and may include mammalian teeth, bones, and horn cores, reptile skeletons, and fragments of ostrich eggs. Microfossils, such as non-marine mollusc shells, are also found in Quaternary deposits. Plant materials, including foliage, wood, pollen, and peat, as well as trace fossils like vertebrate tracks, burrows, termite mounds (termitaria), and rhizoliths (root casts), are also recovered.

The Bushveld Complex comprise of the largest mafic intrusion in the world and underlie an area of almost 65 000 km². The maximum thickness of these rocks is almost 8 km while individual layers can be followed for about 150 km. This intrusion is world renowned for the ore reserves of platinum-group elements namely chromium and vanadium. The Bushveld Complex is divided in 4 groups namely the Lebowa Granite Suite, Raseebie Granophyre Suite, Rustenburg Layered Suite and Rooiberg Group (**Table 5**). The Rustenburg Layered Suite is present in the development footprint. The Rustenburg Layered Suite reveals a complete differentiation sequence of magma and is made up of various rock layers ranging from dunite, gabbro, norite, and pyroxenite, and anorthosite to magnetite and apatite- rich diorite.

The Bushveld Complex is igneous in origin and thus unfossiliferous.

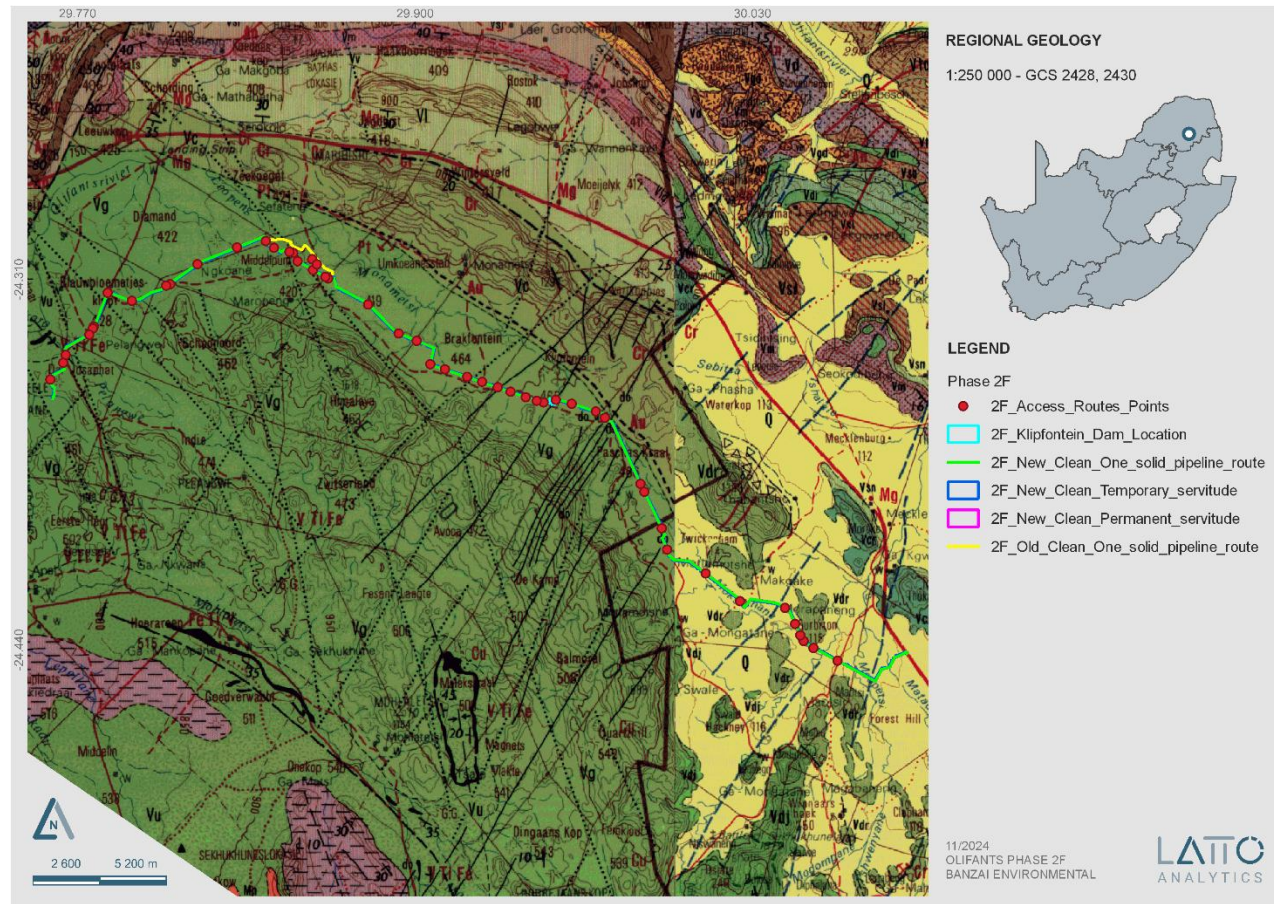


Figure 5. Extract of the 1:250 000 Nylstroom 2428 (1978) and Pilgrim's Rest 2430 (1986) Geological map (Council of Geoscience, Pretoria) indicates that the Project is underlain by Quaternary superficial deposit that includes alluvium and scree (Q, yellow), as well as the Dwars River Subsuite (Vdr, green) and gabbro, norite and anorthosite (Vg) both of the Rustenburg Layered Suite (Bushveld Complex).

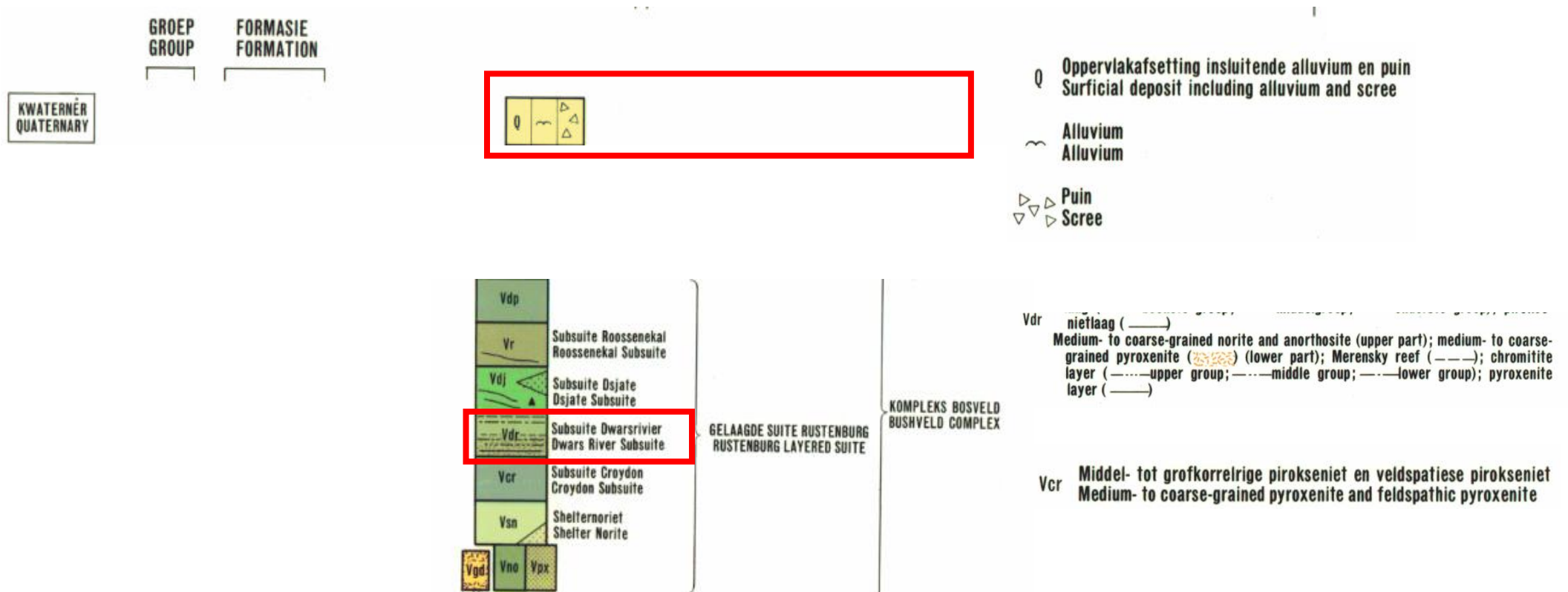
**Table 2: Legend to the 1:250 000 Pilgrim's Rest 2430 (1986) Geological map (Council of Geoscience, Pretoria)****Relevant sediments are indicated in red polygons**

LITHOLOGY/LITOLOGIE				
Mn	Coarse-grained grey to pink granite, in places red near top (". . . ."); Grofkorrelrige grys tot pienk graniet, plek-plek rooi naby top (". . . .")	Nebo Granite Nebo-Graniet	LEBOWA GRANITE SUITE SUITE LEBOWAGRANIE	BUSHVELD COMPLEX KOMPLEKS BOSVELD
Mr	Granophyre; quartz-feldspar porphyry, granophyre (". . . ."); granodiorite (". . . ."); Granofier; kwarts-veldspaatporfier, granofier (". . . ."); granodioriet (". . . .")			
Vu	Ferrogabbro; troctolite, anorthosite (". . . ."); magnetite layer (". . . ."); magnetite pipe (". . . ."); diorite (". . . ."); Ferrogabbro; troktoliet, anortosit (". . . ."); magnetietlaag (". . . ."); magnetietpyl (". . . ."); dioriet (". . . .")	Upper zone Bo-sone	RASHOOP GRANOPHYRE SUITE SUITE RASHOOPGRANOFIER	
Vg	Gabbro, norite, anorthosite Gabbro, noriet, anortosit	Main zone Hoofsone		
Vc	Pyroxenite, porphyritic pyroxenite, anorthosite, leuconorite, melanorite; chromitite layer (". . . ."); Merensky Reef (". . . ."); platinum reef (". . . .") Pirokseniet, porfiritiese pirokseniet, anortosit, leukonoriet, melanoriet; chromietlaag (". . . ."); Merenskyrif (". . . ."); platinumrif (". . . .")	Critical zone Kritieke sone	RUSTENBURG LAYERED SUITE GELAAGDE SUITE RUSTENBURG	
Vi	Melanorite, pyroxenite, serpentinized harzburgite, chromitite layer (". . . .") Melanoriet, pirokseniet, geserpentiniseerde harzburgiet, chromietlaag (". . . .")	Lower zone Onderste sone		
Vgl	Quartz porphyry, altered lava Kwartsporfier, veranderde lawa			
Vs	Porphyritic, spherulitic rhyolite and subordinate andesite, tuff, volcanic breccia and in places ignimbrite at top Porfiritiese, sferulitiese rioliet en ondergeskikte andesiet, tuf, vulkaniese breksie en plek-plek ignimbriet naby top			
Vk	Porphyritic, spherulitic and amygdaloidal rhyolite Porfiritiese, sferulitiese en amandelhoudende rioliet			



Table 3: Legend to the 1:250 000 Pilgrim's Rest 2430 (1986) Geological map (Council of Geoscience, Pretoria)

Relevant sediments are indicated in red polygons



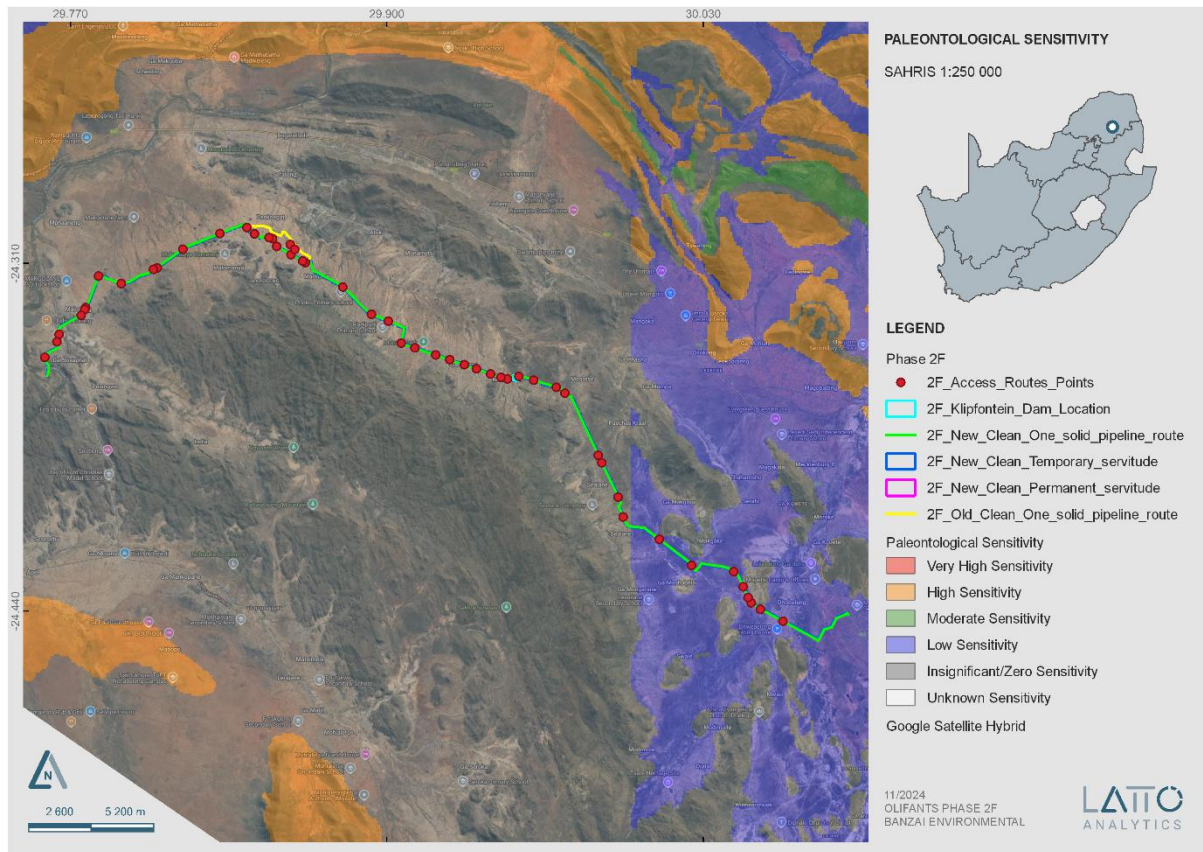


Figure 6: Extract of the SAHRIS PalaeoMap (Council of Geosciences) indicates that the Project is underlain by sediments with a Low (blue) and Zero (grey) Palaeontological Sensitivity.

Table 4: Palaeontological Sensitivity according to the SAHRIS PalaeoMap (Almond et al, 2013; SAHRIS website).

Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study; a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required



WHITE/CLEAR	UNKNOWN	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.
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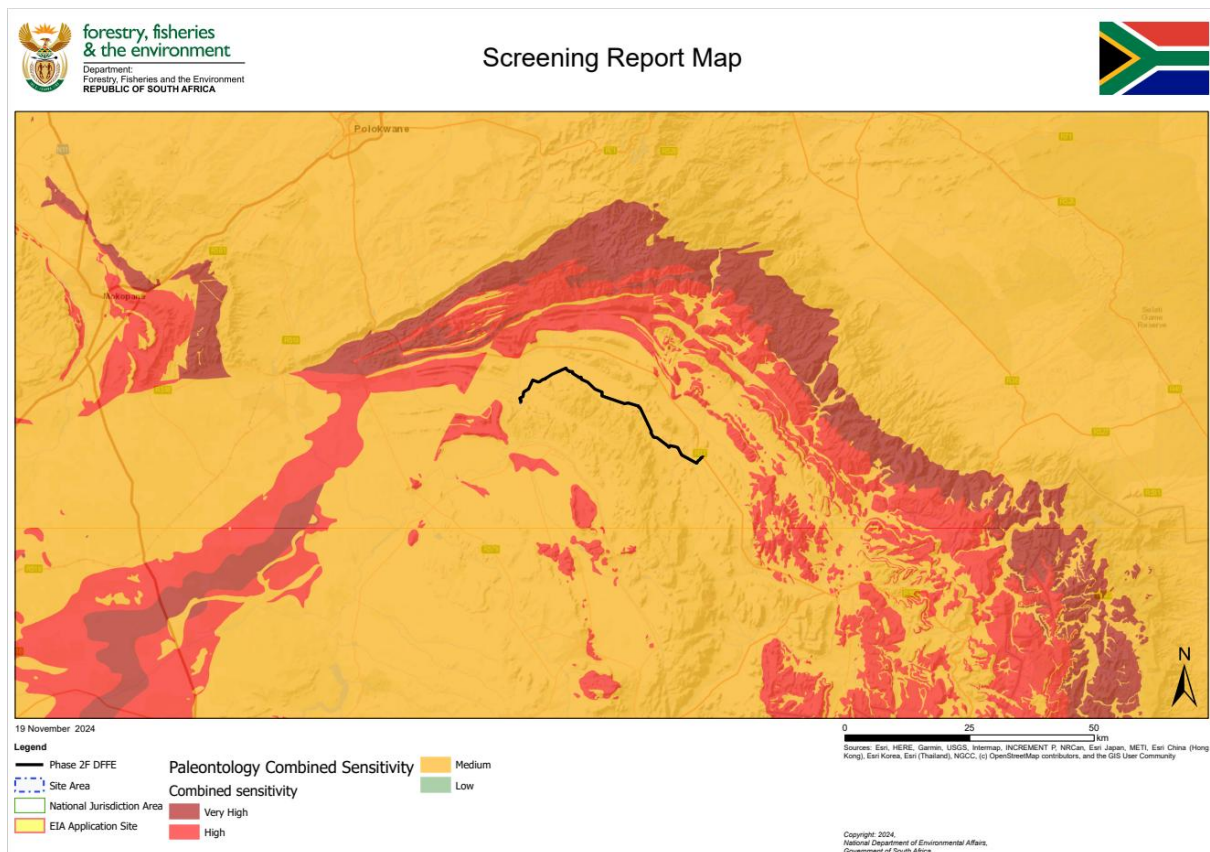


Figure 7: The DFFE National Environmental Web-based Screening Tool indicates that the Palaeontological Sensitivity of the Project is Medium (orange).

The Palaeontological Sensitivity of the Project area is Low (see SAHRIS PalaeoMap, **Figure 5**), while the National Environmental Web-based Screening Tool indicates that the Palaeontological Sensitivity of the development is Medium (yellow) (**Figure 6**). Due to these Sensitivities, no site investigation was conducted for the Project. However, desktop research has confirmed that the Palaeontological Sensitivity of the area is Low.

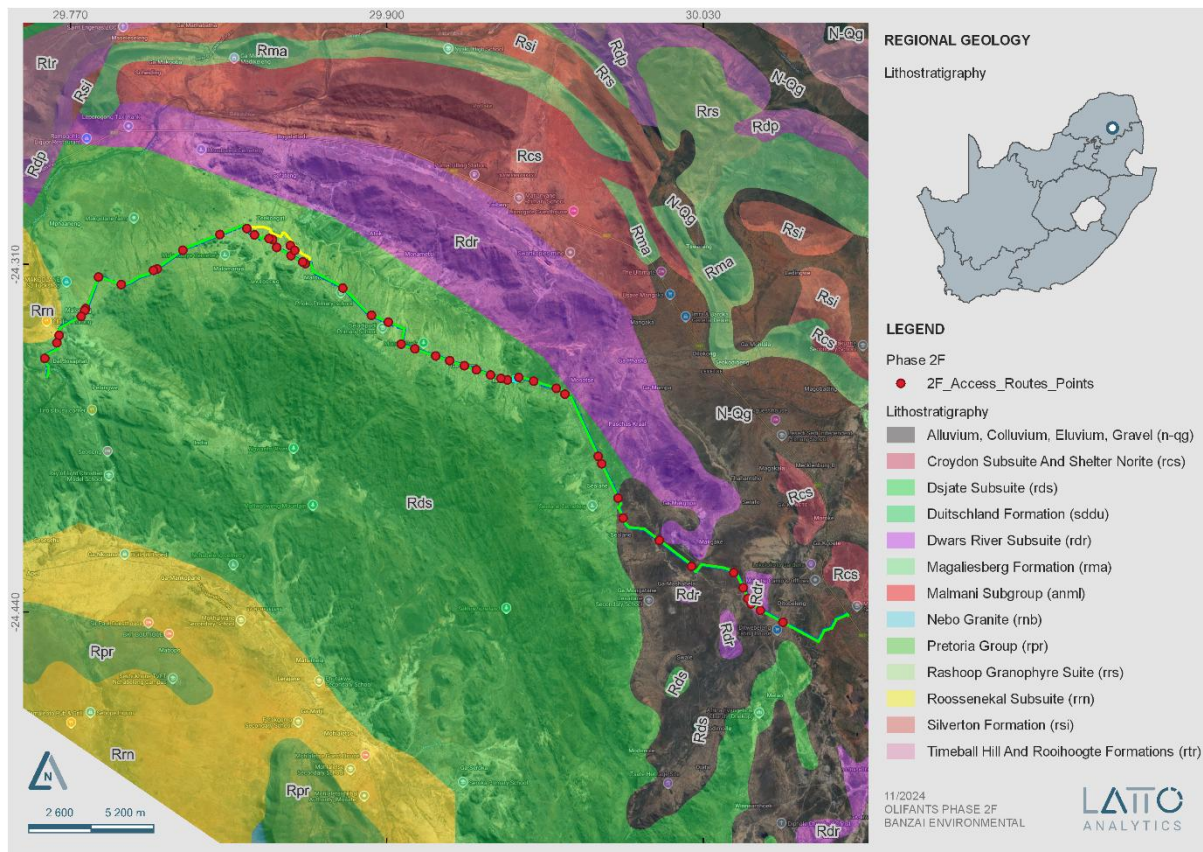


Figure 8: Updated geology (2014, Council for Geosciences, Pretoria) indicates that the study area is underlain by the alluvium, colluvium, eluvium and gravel (n-gg) as well as the Dsjate Subsuite (rds) and Dwars River Subsuite of the Rustenburg Layered Suite of the Bushveld Complex.

Table 5: Currently accepted nomenclature and subdivisions of the Bushveld Complex (Cawthorn et al, 2006)

Lebowa Granite Suite	Nebo, Makhutso, Klipkloof, Bobbejaanskop and Verena Granites	
Rashoop Granophyre Suite	Stavoren and Diepkloof Granophyres, Rooikop Porphyritic Granite, Zwartbank Pseudogranophyre	
Rustenburg Layered Suite	Upper Zone	Subzone C (Ol-Ap diotite) Subzone B (Ol-Mt gabbronorite) Subzone A (Mt gabbronorite)
	Main Zone Upper	Upper Subzone (gabbronorite) Lower Subzone (gabbronorite, norite)



	Critical Zone Upper Subzone (norite, anorthosite, pyroxenite) Lower Subzone (pyroxenite) Lower Subzone (pyroxenite)
	Marginal Zone (norite)
Rooiberg Group	Schrikdkloof Formation (flow-banded rhyolite) Kwaggasnek Formation (dacite, rhyolite) Dullstroom Formation (basaltic andesite)

6 ADDITIONAL INFORMATION CONSULTED

In compiling this report the following sources were consulted:

- Geological map 1:100 000, Geology of the Republic of South Africa (Visser 1984).
- A Google Earth map with polygons of the proposed development was obtained from Zutari.
- 1:250 000 Pilgrim's Rest 2430 Geological map (1986) (Council of Geoscience, Pretoria).
- Updated Geology (2014, Council of Geosciences, Pretoria).
- Palaeosensitivity map on SAHRIS (South African Heritage Resources Information System) website.
- Published geological and palaeontological literature as well as
- Relevant PIAs in the area



7 PALAEOLOGICAL IMPACT ASSESSMENT

IMPACT DESCRIPTION: Loss of Fossil Heritage				
Predicted for project phase:	Pre-construction	Construction	Operation	Decommissioning
PRE-MITIGATION				
Dimension	Rating	Motivation		
Duration	Long-term	Fossils are irreplaceable	Consequence: Slightly detrimental	Significance: Low - negative
Extent	Site-specific	Only the site will be affected		
Intensity	Low - negative	Palaeontological Sensitivity is Low to Zero		
Probability	Fairly likely	Palaeontological Sensitivity is Low to Zero		
MITIGATION:				
Chance Find Procedure If a chance find is made the person responsible for the find must immediately stop working and all work that could impact that finding must cease in the immediate vicinity of the find. • The person who made the find must immediately report the find to his/her direct supervisor which in turn must report the find to his/her manager and the ECO / ESO or site manager. The Environmental Control Officer (ECO) or site manager must report the find to the relevant Heritage Agency (SAHRA). (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. • Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za). The information to the Heritage Agency must include photographs of the find, from various angles, as well as the GPS co-ordinates. • A preliminary report must be submitted to the Heritage Agency within 24 hours of the find and must include the following: 1) date of the find; 2) a description of the discovery and a 3) description of the fossil and its context (depth and position of the fossil), GPS co-ordinates. • Photographs (the more the better) of the discovery must be of high quality, in focus, accompanied by a scale. It is also important to have photographs of the vertical section (side) where the fossil was found. • Upon receipt of the preliminary report, the Heritage Agency will inform the ECO / ESO (or site manager) whether a rescue excavation or rescue collection by a palaeontologist is necessary. • The site must be secured to protect it from any further damage. No attempt should be made to remove material from their environment. The exposed finds must be stabilized and covered by a plastic sheet or sand bags. The Heritage agency will also be able to advise on the most suitable method of protection of the find. • If the fossil cannot be stabilized the fossil may be collected with extreme care by the ECO / ESO. Fossils finds must be stored in tissue paper and in an appropriate box while due care must be taken to remove all fossil material from the rescue site. • Once the Heritage Agency has issued the written authorization, the developer may continue with the development on the affected area.				
POST-MITIGATION				
Dimension	Rating	Motivation		
Duration	Long-term		Consequence: Negligible	Significance: Very low
Extent	Site-specific			
Intensity	Negligible			
Probability	Very likely			





8 FINDINGS AND RECOMMENDATIONS

The proposed Project is underlain by Quaternary superficial deposit that includes alluvium and scree, as well as gabbro, norite and anorthosite and Dwars River Subsuite of the Rustenburg Layered Suite (Bushveld Complex). The PalaeoMap of SAHRIS indicates that the Palaeontological Sensitivity of the Quaternary deposit is Low while that of the Bushveld Complex is Zero as it is igneous in origin and thus unfossiliferous (Almond and Pether, 2009; Almond et al., 2013, Groenewald et al 2014). The DFFE Web based Screening tool indicates that the Palaeontological Sensitivity of the study area is Medium. Updated geology (2014, Council for Geoscience, Pretoria) indicates that the Project is underlain by underlain by the alluvium, colluvium, eluvium and gravel as well as the Dsjate Subsuite and Dwars River Subsuite of the Rustenburg Layered Suite of the Bushveld Complex.

Desktop research (published data) concluded that **fossil heritage of scientific and conservational interest in the development area is rare**. This is in agreement with the Low Sensitivity allocated to the development area by the SAHRIS Palaeosensitivity Map and Medium Sensitivity of the DFFE Screening Tool. **A low Palaeontological Significance has been allocated for the construction phase of the Project pre-mitigation and a Very Low significance post mitigation**. The construction phase will be the only development phase impacting Palaeontological Heritage and **no significant impacts are expected to impact the Operational and Decommissioning phases**. As the No-Go Alternative considers the option of 'do nothing' and maintaining the status quo, it will have a Neutral impact on the Palaeontological Heritage of the development. The **Cumulative impacts of the development is considered to be Low pre- mitigation and Low post mitigation and falls within the acceptable limits for the project**.

It is therefore considered that the Phase 2F Project will not lead to damaging impacts on the palaeontological resources of the area. The development **may thus be permitted in its whole extent, as the development footprint is not considered sensitive in terms of palaeontological resources**. It is consequently recommended that **no further palaeontological heritage studies, ground truthing and/or specialist mitigation are required, pending the discovery of newly discovered fossils**.

Recommendations:

- If Palaeontological Heritage is uncovered during surface clearing and excavations the **Chance find Protocol** attached should be implemented immediately. Fossil discoveries ought to be protected and the ECO/site manager must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that mitigation (recording and collection) can be carried out.



- Preceding any collection of fossil material, the specialist would need to apply for a collection permit from SAHRA. Fossil material must be curated in an accredited collection (museum or university collection), while all fieldwork and reports should meet the minimum standards for palaeontological impact studies suggested by SAHRA

These recommendations should be incorporated into the Environmental Management Programme (EMPr) for the Project in Limpopo.

9 CHANCE FINDS PROTOCOL

The following procedure will only be followed if fossils are uncovered during the excavation phase of the development.

10.1 Legislation

Cultural Heritage in South Africa (includes all heritage resources) is protected by the **NHR Act (Act No 25 of 1999) (NHRA)**. According to Section 3 of the Act, all Heritage resources include **“all objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens”**.

Palaeontological heritage is unique and non-renewable and is protected by the NHRA and are the property of the State. It is thus the responsibility of the State to manage and conserve fossils on behalf of the citizens of South Africa. Palaeontological resources may not be excavated, broken, moved, or destroyed by any development without prior assessment and without a permit from the relevant heritage resources authority as per section 35 of the NHRA.

A fossil is the naturally preserved remains (or traces thereof) of plants or animals embedded in rock. These organisms lived millions of years ago. Fossils are extremely rare and irreplaceable. By studying fossils, it is possible to determine the environmental conditions that existed in a specific geographical area millions of years ago.

This informational document is intended for workmen and foremen on construction sites. It describes the actions to be taken when mining or construction activities accidentally uncovers fossil material.

It is the responsibility of the ECO, Environmental Site Officer (ESO) or site manager (whatever the case may be) of the project to train the workmen and foremen in the procedure to follow when a fossil is accidentally uncovered. In the absence of the ECO / ESO / Site Manager, a member of the staff must be appointed to be responsible for the proper implementation of the chance find protocol as not to compromise the conservation of fossil material.



10.2 Chance Find Procedure

- If a chance find is made the person responsible for the find must immediately **stop working** and all work that could impact that finding must cease in the immediate vicinity of the find.
- The person who made the find must immediately **report** the find to his/her direct supervisor which in turn must report the find to his/her manager and the ECO / ESO or site manager. The ESO or site manager must report the find to the relevant Heritage Agency (SAHRA). (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa.
- Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za. The information to the Heritage Agency must include photographs of the find, from various angles, as well as the GPS co-ordinates.
- A preliminary report must be submitted to the Heritage Agency within **24 hours** of the find and must include the following: 1) date of the find; 2) a description of the discovery and a 3) description of the fossil and its context (depth and position of the fossil), GPS co-ordinates.
- Photographs (the more the better) of the discovery must be of high quality, in focus, accompanied by a scale. It is also important to have photographs of the vertical section (side) where the fossil was found.
- Upon receipt of the preliminary report, the Heritage Agency will inform the ECO / ESO (or site manager) whether a rescue excavation or rescue collection by a palaeontologist is necessary.
- The site must be secured to protect it from any further damage. **No attempt** should be made to remove material from their environment. The exposed finds must be stabilized and covered by a plastic sheet or sand bags. The Heritage agency will also be able to advise on the most suitable method of protection of the find.
- If the fossil cannot be stabilized the fossil may be collected with extreme care by the ECO / ESO. Fossils finds must be stored in tissue paper and in an appropriate box while due care must be taken to remove all fossil material from the rescue site.
- Once the Heritage Agency has issued the written authorization, the developer may continue with the development on the affected area.



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APPENDIX 1

CURRICULUM VITAE

PROFESSION: Palaeontologist

YEARS' EXPERIENCE: 30 years in Palaeontology

EDUCATION: B.Sc Botany and Zoology, 1988
University of the Orange Free State

B. Sc (Hons) Zoology, 1991
University of the Orange Free State

Management Course, 1991
University of the Orange Free State

M. Sc. *Cum laude* (Zoology), 2009
University of the Free State

Dissertation title: The postcranial skeleton of the Early Triassic non-mammalian Cynodont *Galesaurus planiceps*: implications for biology and lifestyle

MEMBERSHIP

Palaeontological Society of South Africa (PSSA) 2006-currently

EMPLOYMENT HISTORY

Part time Laboratory assistant Department of Zoology & Entomology
University of the Free State Zoology 1989-1992



Part time laboratory assistant

Department of Virology

University of the Free State Zoology 1992

Research Assistant

National Museum, Bloemfontein 1993 – 1997

Principal Research Assistant

National Museum, Bloemfontein

and Collection Manager

1998–2022

TECHNICAL REPORTS

Butler, E. 2014. Palaeontological Impact Assessment of the proposed development of private dwellings on portion 5 of farm 304 Matjesfontein Keurboomstrand, Knysna District, Western Cape Province. Bloemfontein.

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- Butler, E. 2024. Palaeontological Impact Assessment for the Proposed Padloper (Projects 5, 6 and 7) Solar Photovoltaic (PV) Facilities and the dedicated 132 KV Overhead Power Lines and Associated Infrastructure near Murraysburg, Western Cape Province
- Butler, E. 2024. Palaeontological Impact Assessment for the Proposed Bakerville Collector Substation with Electrical Grid Infrastructure to the Watershed MTS and Associated Infrastructure near Lichtenburg, North-West Province
- Butler, E. 2024. Palaeontological Impact Assessment for the Proposed FS Toni Battery Energy Storage System (Bess) and Associated Infrastructure near Bloemfontein, Free State Province.
- Butler, E. 2024. Palaeontological Impact Assessment for the Proposed FS Green Air Wind Farm Battery Energy Storage System (Bess) and Associated Infrastructure near Bloemfontein, Free State Province.
- Butler, E. 2024. Palaeontological Impact Assessment for the proposed development of by-pass access roads and associated Infrastructure as part of the Hartebeesthoek Wind Energy Facilities, near Noupoot, Northern Cape Province.
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- Butler, E. 2024. Palaeontological Impact Assessment for the Tango Energy Facility Grid Connection Corridor near Klerksdorp, in the North-West Province.
- Butler, E. 2024. Palaeontological Impact Assessment for the Proposed Somkhele Anthracite Mining Expansion Project by Tendele Mining (Pty) Ltd.
- Butler, E. 2024. Palaeontological Impact Assessment for the Proposed Xhariep Pipeline, Free State Province.



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

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SPECIALIST DECLARATION FORM – AUGUST 2023

Specialist Declaration form for assessments undertaken for application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

REPORT TITLE

REPORT TITLE

OLIFANTS MANAGEMENT MODEL PROGRAMME BULK RAW WATER STUDY PHASE (OMMP-BRWSP): PROPOSED PHASE 2F PIPELINE RE-ALIGNMENT AND ASSOCIATED INFRASTRUCTURE, IN THE FETAKGOMO TUBATSE AND LEPELLE NKUMPI LOCAL MUNICIPALITIES, WITHIN THE CAPRICORN AND GREATER SEKHUKHUNE DISTRICT MUNICIPALITIES, IN THE LIMPOPO PROVINCE.

Kindly note the following:

1. This form must always be used for assessment that are in support of applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting, where this Department is the Competent Authority.
2. This form is current as of August 2023. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.dffe.gov.za/documents/forms>.
3. An electronic copy of the signed declaration form must be appended to all Draft and Final Reports submitted to the department for consideration.
4. The specialist must be aware of and comply with 'the Procedures 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 act, when applying for environmental authorisation - GN 320/2020', where applicable.

1. SPECIALIST INFORMATION

Title of Specialist Assessment	Paleontology
Specialist Company Name	Banzai Environmental (Pty) Ltd
Specialist Name	Elize Butler
Specialist Identity Number	6606120116080
Specialist Qualifications:	MSc
Professional affiliation/registration:	PSSA
Physical address:	14 Eddie de Beer, Bloemfontein
Postal address:	14 Eddie de Beer, Bloemfontein
Postal address	14 Eddie de Beer, Bloemfontein
Telephone	0844478759
Cell phone	0844478759
E-mail	info@banzai-group.com

SPECIALIST DECLARATION FORM – AUGUST 2023

2. DECLARATION BY THE SPECIALIST

I, Elize Butler declare that –

- 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

Banzai Environmental (Pty) Ltd

Name of Company:

01 Aug 2025

Date

SPECIALIST DECLARATION FORM – AUGUST 2023

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, Elize Butler, 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

Banzai Environmental

Name of Company

01-08-2025

Date



Signature of the Commissioner of Oaths

01 Aug 2025

Date

