

APPENDIX D₁

Heritage Report

**Executive Summary – Heritage Impact Assessment for proposed
construction of a water pipeline in Senekal, Setsotso Local Municipality,
FS Province.**

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A phase 1 Heritage Impact assessment was conducted for a proposed construction of a water pipeline between the Cyferfontein Dam, the Senekal reservoir and the Matwabeng Dam in Senekal, FS Province. The Karoo sedimentological strata underlying the proposed pipeline route and surrounding area are generally accepted to be Late Permian in age, and are assigned to the *Dicynodon* and overlying *Lystrosaurus* Assemblage Zones. The sediments assigned to the *Dicynodon* AZ are associated with stream deposits consisting of floodplain mudstones and subordinate, lenticular channel sandstones. Therapsids and other vertebrate fossils from the *Dicynodon* AZ are usually found as dispersed and isolated specimens in mudrock horizons, associated with an abundance of calcareous nodules. *Dicynodon lacerticeps* have been found on the Senekal commonage. Plant fossils (*Dadoxylon*, *Glossopteris*) and trace fossils (arthropod trails, worm burrows) are also present. Fossil trees of the *Dadoxylon* genus are common in the Winburg and Harrismith districts. A high occurrence of fossil wood has been recorded on the farms Waterloop 698, Langlaagte 398, Helderwater 701, Onze Rust 700 and Blinkwater 702. Partially consolidated Quaternary alluvium found along river valleys near Senekal, are characterized by extensive erosion in the form of dongas, and are known to occasionally contain late Pleistocene vertebrate remains (e.g. *Phacochoerus* sp.) and even localized death assemblages (e.g. alcelaphine remains at Heelbo). However, there is currently no record of Quaternary-age fossils from alluvial sediments in the vicinity of the footprint.

The South African central plateau is distinctive in that it supported Stone Age people over thousands of years, who were also prolific makers of stone tools until relatively recent times.

This can be seen in the high density of Stone Age archaeological traces visible on the landscape today. The range of archaeological sites encountered in the Free State is extensive, in terms of both typology and chronology. This include Early Stone Age bifaces, and retouched blades and trimmed points from the Middle Stone Age to the microlithic Wilton and Smithfield Complexes from the Holocene. Surface scatters of Later Stone Age and Middle Stone Age artifacts are frequent archaeological components along erosional gullies (dongas) of rivers and streams in the region. The incidence of surface scatters usually decreases away from localized areas such as riverine sites and dolerite-shale contact zones. Away from riverine contexts, Stone Age artifacts generally occur as contextually derived individual finds in the open veld. Several Later Stone Age sites have been identified near Bethlehem including the Saulspoort, Poortjie and Trekpad rockshelters. In addition to these shelters, several rock art localities, containing depictions of human figures, have been recorded in the Witteberge southeast of Paul Roux. A variety of stone dagga pipes have been collected in the region, including engraved sandstone and mudstone pipes, as well as a number made of baked clay. The archaeological footprint in the region is primarily dominated by Late Iron Age stone wall complexes. Stone enclosures found on and around dolerite koppies along the river valley between Winburg and Bethlehem, exhibit telltale signs of basic structural units including huts, large enclosures, pieces of walling and stone circles related to Late Iron Age settlements in the area. These sites were occupied from as early as the sixteenth and seventeenth centuries and represent a system that can be broadly attributed to groups ancestral to the Sotho-speaking people of today (Maggs 1976). Extensive Iron Age settlements have been recorded previously between Paul Roux and Winburg at Three Sisters, Palmietfontein, Monte Carlo, La Rochelle, Leeukop, Vaalbank, Petra, Erfstuk, Allemanskraaldam, Fraai Uitzicht and the Allemanskraal Dam at the Willem Pretorius Nature Reserve.

Investigation of the proposed pipeline route indicates that

- It has been severely degraded by previous road building, residential development and farming activities.
- There is no evidence for the accumulation and preservation of intact fossil material within the Quaternary sediments (topsoils) covering the underlying sedimentary rocks especially along the Sandspruit section.

- There are no indications of Stone Age artifacts, prehistoric structures or rock engravings within the footprint. There is also no evidence of historical structures within the confines of the route. A section of the footprint are located near a large cemetery in Matwabeng township but it will not be affected by the proposed development.
- There are no major palaeontological grounds to suspend the proposed development, but it is noted that primarily coarse-grained Adelaide Subgroup sandstones are outcropping at the high ground (koppie) where the town's reservoir is located.
- Potential for palaeontological impact is considered low, but it is advised that newly uncovered fossil material found during the course of excavations into intact sedimentary bedrock along this section of the footprint must be reported to SAHRHA and that possible intact finds may require a Phase 2 rescue operation at the cost of the developer.

AUTHOR DETAILS

Dr. Lloyd Rossouw specializes in the southern African Quaternary and has over twenty years of extensive fieldwork experience. He graduated with Archaeology and Cultural Anthropology for his BA degree and went on to receive training in southern African archaeology at Honours level at the University of Stellenbosch's Archaeology Department. He received specialized training in faunal osteology and Quaternary palaeontology for his MSc-degree at the Bernard Price Institute of Palaeontology (Wits) and obtained his PhD-degree at the University of the Free State, specializing in plant microfossil research. He is a member of the Association for Southern African Professional Archaeologists (ASAPA) and the Palaeontological Society of Southern Africa (PSSA).

DECLARATION OF INDEPENDENCE

I, Lloyd Rossouw, declare that I act as an independent specialist consultant. I do not have or will not have any financial interest in the undertaking of the activity other than remuneration for work as stipulated in the terms of reference. I have no interest in secondary or downstream developments as a result of the authorization of this project.

Yours truly,

A handwritten signature in black ink, appearing to read 'L Rossouw', written in a cursive style.

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